Fort McHenry
Baltimore
Baltimore City County
Maryland

HABS No. MD-63

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HISTORIC AMERICAN BUILDINGS SURVEY HABS No. MD-63

FORT McHENRY

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A brick-faced, five-baationed, pentagonal fort; and its predeceasor, Fort Whetstone, the Revolutionary War earthen "star" fort; the Fort McHenry Sally Port, Casemates, and Guard Rooms

An Addendum to
Fort McHenry
Fort McHenry National Monument
Whetstone Point, overlooking
Patapsco River
Baltimore, Maryland
in HABS Catalog Supplement (1959)

Location: Fort McHanry National Monument and Historic Shrine, Whetstone Point, Baltimore, Baltimore County, Maryland.

Present Owner: Owned by the Nation, custody of tha National Park Service.

Present Use: Part of a maintained group of historic structures.

Brief Statement of Significance: The pentagonal fort is the most important, least changed, surviving feature of the hiatoric bombardment of Fort McHenry, September 13-14, 1814. The aally port, casemates, and guard rooms were built after the bombardmant, and are intaresting as functional adjuncts to the needs of a military installation.

Historical and Architectural Information: The following historical and architectural account has been extracted from An Architectural Study of Fort McHenry by Lee H. Nelson, National Park Service Architect. It was compiled for the Historic American Buildings Survey in connection with restoration work carried on at the Fort McHenry National Monument and Historic Shrine. Fifty copies were publiahed in January 1961 and diatributed to a limited number of libraries.

## FOREWORD

This architecturally-oriented study is limited to the physical history of the "star fort" and its successor, the pentagonal fort, on Whetstone Point, Baltimore, from 1776 to 1857. Later changes, though interesting, are not included since the fort and buildings have not undergone any structural change since that date.

This study does not deal with the outworks or outer buildings, nor is it concerned with general historic events, except as they affected the construction and the alteration of the fort. Those aspects are discussed at length by Dr. S. Sydney Bradford and Franklin R. Mullaly, National Park Service Historians, in their report, "Fort McHenry, Historical and Archeological Research Project, 1957-1958." The writer acknowledges their cooperation in undertaking the architectural evaluation of the documents, which they collected and arranged for the Fort McHenry research library. Credit is also due G. Hubert Smith, Archeologist, Missouri Basin Project, Smithsonian Institution, for his assistance during the summer of 1958, and for reading the text of this report.

The research and writing of this physical history was made possible by Historic American Buildings Survey funds, and was conducted during the summer of 1958 as a H.A.B.S. project at Fort McHenry. Four buildings were measured and recorded (under the writer's direction) by an excellent team of student architects, as follows: Benjamin F. Barr II, University of Pennsylvania; Orville W. Carroll, University of Oregon; Harold A. Nelson, University of Michigan; Trevor R. Nelson, Massachusetts Institute of Technology; and George L. Wrenn III, Harvard University. Two other structures (Buildings "A" and "C") were not measured because of the time limitation.

The writer acknowledges the assistance of Fort McHenry Superintendent Robert H. Atkinson, for furnishing drafting space, and his successor, Walter T. Berrett, for his overall cooperation which simplified the completion of the H.A.B.S. project. Wilbur H. Hunter, Jr., Peale Museum, Baltimore, contributed to this report by facilitating the reproduction of old views in the museum collection. The writer is especially indebted to Charles E. Peterson, Supervising Architect, Historic Structures, Eastern Office, Division of Design and Construction, for his suggestions and direction of this architectural study.

The written data, the photographs, and the drawings comprising this study are in the Historic American Buildings Survey collection in the Library of Congress, from which copies are available.

Lee H. Nelson
Philadelphia
January, 1961

CHAPTER I. FORT WHETSTONE AND FORT McHENRY, 1776-1857

PART A. Historical Information

## FORT WHETSTONE, WHETSTONE POINT, BALTIMORE, 1776-1797

### The Earthen Redoubt or "Star Fort"

As early as January 20, 1776, the Maryland Congress of Deputies, or Convention as it was popularly called, resolved that "... the Town of Baltimore [should] be fortified if it be practicable."[1] On January 29, following this initial resolution, the Council of Safety, administrative body for the Convention, requested of Samuel Purviance, Chairman of the Committee of Observation in Baltimore Town that,

> said Committee would furnish them with a Chart of the North East Branch of Patapsco River from Whetstone Point; also the Soundings a [sic] Depth of the Water between that Point and Gorsuch's Point also a plan of Fortification and Cheveaux [sic] de Frise or other Obstructions to be placed in the River together with an Estimate of the Expense.[2]

That the Council lost no time in seeking some sort of engineering assistance is evident, for on January 31, they held a fortifications conference with two amateur Vaubans in attendance. These

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[1]Maryland Council of Safety to the Deputies for Maryland in Congress, January 20, 1776, Archives of Maryland, XI, 101. Cited hereafter as Arch. Md.

[2]Journal of the Council of Safety, January 29, 1776, Arch. Md., XI, 120. On the same day, the Baltimore County Committee of Observation unanimously resolved,

> That Messrs. Samuel Purviance, Isaac Grist, Benjamin Griffith, William Buchanan, and Thomas Harrison, be a Committee to devise and point out to the Council of Safety the best modes for fortifying and defending Baltimore Town, and to make out an Estimate of the expenses of each.

Resolution of the Baltimore County Committee, January 29, 1776, American Archives, Fourth Series, IV, 1738. Cited hereafter as Amer. Arch.

two gentlemen, James Alcock, Baltimore schoolmaster, and Felix Louis Massenbach, occupation unknown, were to play a significant role in designing the defenses at Whetstone Point.[3]

On February 2, only two days after the conference, the Council went to Whetstone Point, "to inform themselves of the situation thereof, and consider of the practicability of fortifying the same."[4] It is very probable that the Baltimore Committee of Observation, together with Alcock and Massenbach, met the Council at Whetstone Point on that occasion and presented a proposal for land fortifications and channel obstructions. Such a proposal was submitted to the Council and approved February 3. The Baltimore Committee agreed to undertake the business and complete the same "with all convenient speed," for the sum of £ 6,200.[5] The money was appropriated and work was begun in earnest on February 13, as recorded four days later.

> We have ab[out] 50 hands at work on a battery since tuesday at Whetstone...[6]

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[3]Journal of the Council of Safety, January 31, 1776, Arch. Md., XI, 127. Alcock's name is sometimes spelled Allcock in the documents. The correct spelling is uncertain. In the 1790 Census, Alcock is used. Massenbach's name is variously listed as Maussenbaugh, Massenback, and Nassenbaugh. Upon resigning his commission, the name is listed as Mr. Felix Louis Baron Massenbach.

[4]Journal of the Council of Safety, February 2, 1776, Arch. Md., XI, 133. The selection of Whetstone Point was based primarily on its strategic location. When the Council determined that Whetstone Point was the most advantageous site for Baltimore's defenses, the property was confiscated from the Principio Company, a British association of ironmasters, which had been engaged in the removal of iron-ore on along the Point. See Appendix I, "Whetstone Point Lands."

[5]Journal of the Council of Safety, February 3, 1776, Arch. Md., XI, 136.

[6]Samuel Purviance to the Council, February 17, 1776, Arch. Md., XI, 167.

On February 10, prior to this flurry of activity, Massenbach was commissioned 2d Lt. of Captain Fulford's Artillery Company, and probably placed in charge of the works to be erected on Whetstone Point.[7] Massenbach's usefulness in this capacity is amply demonstrated in a letter from Charles Carroll, the Barrister, to the Council, dated February 19, 1776,

> ...I understand that the gentlemen of the Committee of Baltº Town find [Massenbach] very necessary to them in erecting their fortification...

In fact, his engineering talents (the extent of which are unknown) were also in demand at Annapolis for fortifications erecting there.[8] Later he removed to Virginia to assist with the defenses in that colony.[9]

The fortification erected on Whetstone Point under the direction of Felix Louis Massenbach, during the month of February 1776, was almost certainly limited to a shore-line gun battery, as there is no evidence that a star fort existed when the British sloop, the Otter, appeared in Chesapeake Bay on March 5, 1776. The approach of

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[7] In addition to his commission, Massenbach was paid twenty pounds, "for his Expenses in attending the late Convention and this Council and for his Services as an Engineer." Journal of the Council of Safety, February 10, 1776, Arch. Md., XI, 148.

[8] Barrister Carroll to Council, February 19, 1776, Arch. Md., XI, 172.

[9] Reference to Massenbach's design for the battery at Whetstone is found in William Lux's letter to the Council, March 21, 1776, Arch. Md., XI, 274, as follows:

> Genl. Lee got here last night and has been to view our Battery, he thinks it very well executed, and that it will answer the intention. He has taken Mr. Massenbaugh [sic] with him to Virga & says [Massenbach] understands his business & that he cant do without him.

the Otter not only caused obstructions to be placed in the channel between Whetstone and Gorsuch's Point,[10] but motivated the hasty erection of another gun battery and a breastwork, or low-lying, earthen "star fort."[11] Though the British sloop turned tail and went "prowling" down the bay, the Baltimore defenders were determined to "push" the new works on the Point as a show of strength against the marauders' return. By March 16, the committee reported,

> Our Fort at Whetstone is ready to mount 8 guns, and we shall use every exertion to expedite it.[12]

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[10]The channel "obstructions" included the sinking of small vessels and the installation of a boom and iron chain between the two points. The vessels were raised 3 1/2 months later.

[11]On March 7, only two days after the alarm caused by the Otter, the Council requested of the Baltimore Committee, "You will acquaint us as soon as you can with any Measures you may think necessary for your Defence that may be in our Power, and we will forward them with all expedition," Council to Baltimore Committee, March 7, 1776, Arch. Md., XI, 208.

The same day, the Balt. Committee Resolved, "That a Breastwork be immediately thrown up at the Point...," Baltimore Committee, March 7, 1776, Amer. Arch., Fourth Series, V, 1508.

Following this decision, on March 8, the Council sent £1000 to the Balt. Comm., to defray militia expenses occasioned by the alarm, and also asked for an accounting of "Monies expended on the fortifications at Whetstone Point." See Council to Baltimore Committee, June 5, 1776, Arch. Md., XI, 465, Journal of the Council, March 28, 1776, Arch. Md., XI, 294, Journal of the Council, September 12, 1776, Arch. Md., XII, 266, Council to Baltimore Committee, September 28, 1776, Arch. Md., XII, 308.

[12]Baltimore Committee to Council, March 16, 1776, Arch. Md., XI, 255-56. The problem arises as to whether the term "Fort" is here used interchangeably with the batteries, or whether it actually alludes to the "star fort" as eventually completed. After mid-March, however, there are frequent references to the "fort" on Whetstone Point, which seem to distinguish the batteries from the "star fort." See for example, Maryland Delegates to New-York Committee of Safety, March 19, 1776, Amer. Arch., Fourth Series, X, 414, "Fortifications and batteries are now erecting..."

Not only did they expedite completion of the fortifications, but there was talk of adding buildings at the Point. In a letter to the Council, Nathaniel Smith committed to writing, "...what would be necessary to have done about the fort." He proposed the addition of "...a Magazine, Hospital and Laboratory, which in my opinion no fort or garrison ought to be without..."[13] Later, in May, Smith asked,

> I shoud [sic] be glad to have Orders to git [sic] a Flagg [sic] for the Fort, & to know what Device you wou'd [sic] have on it (if aney) [sic],

and pressed for the erection of a magazine, "as we Cannot possibly do well without it."[14]

A plan, apparently for the magazine, was submitted by Colonel Francis Ware, then stationed at the fort. Though the Council hesitated to advance any sums for that purpose, they left the matter to the discretion of the Baltimore Committee, and that group determined to proceed with the magazine. When Colonel Ware left the fort, he left the erection of the magazine in the hands of Nathaniel Smith but the powder storage house was not actually built.[15]

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[13]N. Smith to Council, March 30, 1776, Arch. Md., XI, 300-301.

[14]Nathaniel Smith to Council, May 20, 1776, Arch. Md., XI, 434.

[15]For reference to Ware's plan, see Baltimore Committee to Council, July 7, 1776, Arch. Md., XII, 6. For the Council's rejection of the request for funds, see Council to Baltimore Committee, July 7, 1776, Arch. Md., XII, 7. Regarding the disposition of Ware's design, see Nathaniel Smith to Barrister Carroll, July 18, 1776, Arch. Md., XII, 75. For other documents refcrring to the planned but unexecuted erection of the magazine, see Council to Baltimore Committee, December 5, 1776, Arch. Md., XII, 508, Council to N. Smith, June 5, 1777, Arch. Md., XIII, 278, Nathaniel Smith to Gov. Johnson, June 3, 1777, Maryland State Papers, Brown Books, 62, V, 60. Geo. P. Keeports to Gov. Lee, July 12, 1780, Arch. Md., XLV, 11.

Design of the earthen "star fort," though not certain, is attributable to James Alcock. Alcock designed and erected a "fortification" at Whetstone, but what part of the works he designed is not clear. The relative chronological sequence of the supporting evidence bears out the assumption that while Massenbach designed the gun batteries, Alcock designed the earthen "star fort."

Alcock, together with Massenbach, had conferred with the Council in January 1776, on the subject of fortifications, but he does not seem to have had a hand in the earliest defenses (i.e., the gun battery) on Whetstone Point. Massenbach had left for Virginia shortly after the appearance of the Otter, and the subsequent erection of the "star fort" was probably put into the hands of Alcock.

On July 27, 1776, Charles Carroll wrote of Alcock,

> He has been as I am Informed of great Help to the Gent[n] of Balt. Town in Designing and Erecting their fortification at Whetstone.[16]

And on September 6, 1776, Alcock was paid forty-five pounds out of the Western Shore Treasury, "for thirty days' Engineering," but whether this payment was for services rendered at Baltimore or elsewhere is not stated.[17]

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[16]Barrister Carroll to Council, July 27, 1776, Arch. Md., XII, 130-131.

[17]Journal of the Council, September 6, 1776, Arch. Md., XII, 259.

In late August 1777, the British made another appearance near the mouth of the Patapsco, but Baltimoreans were somewhat better prepared on this occasion. Nathaniel Smith notified the Governor that he and the militia, "shant give up the Fort, without giving them some trouble," and that if the British should attempt the fort, he promised to give them a warm reception.[18] The high state of preparedness evoked editorial comment from the Maryland Gazette:

> The fort, batteries, and boom, at Whetstone Point are in excellent order; an air-furnace is erected on the Point, from which red thunderbolts of war will issue to meet our invading foes.[19]

The British war vessels left the Patapsco area without forcing such a demonstration and local attention turned to more domestic problems, especially the so-called Baltimore Insurrection which grew out of the distresses made under the "Militia Law."

In 1778, some temporary barracks, on the lower slopes of Whetstone Point, housed wounded soldiers but in one doctor's opinion,

> "the Fort is a very unfit place for an hospital...because a Situation Surrounded with Water in itself sickly must in Consequence make it more Difficult for People allready [sic] Sick to recover..."[20]

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[18]N. Smith to Gov. Johnson, August 22, 23, 1777, Arch. Md., XVI, 340-42.

[19]Maryland Gazette (Baltimore), September 9, 1777.

[20]Dr. Wiesenthal to Maj. Nathaniel Smith, October 22, 1778, Maryland State Papers, Brown Books, 168, V, 114. As to the "fitness" of the fort, see Brown Books, 169, V, 116, 172, V, 115, Red Books, 318, XXI, 66-1.

However, the fort was maintained during the winter of 1778, equipped with an armament of 30 cannon.[21]

In the spring of 1779, another British force appeared in the bay and the tempo of activity at Fort Whetstone once again increased, but the expected attack never materialized.[22] With the concentration of the enemy's efforts in Virginia, much of the personnel, supplies, and effort that had gone to maintain Fort Whetstone was diverted for the use of the Continental Army in Virginia.

During the winter of 1779, the barracks on Whetstone Point were considered for hospital use of wounded French troops, then in Virginia, but the lack of facilities and local reluctance to quarter the wounded French conspired against the move, and thus saved "a good deal of trouble," in one unofficial view.[23]

By November 1780, the active usefulness of the fort at Whetstone had passed, and its commander, Capt. George P. Keeports, was advised by the Council to remove all but four or five cannon "to some Place of security in the Country, together with the Arms, Ammunition,

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[21] Inventory of Cannon, etc., November 2, 1778, Maryland State Papers, Red Books, 719, IX, 303.

[22] For correspondence pertaining to this, the third threatened attack, see Maj. Nathaniel Smith to Gov. Thomas Johnson, May 16, 1779, Maryland State Papers, Red Books, 403, XXV, 64, Council to A. Buchanan, May 22, 1779, Executive Papers, Hall of Records, Annapolis. Council to A. Buchanan, May 19, 1779, Arch. Md., XXI, 403. Council to R. Dallam, May 16, 1779, Arch. Md., XXI, 394.

[23] Jas. Calhoun to Gov. Thomas S. Lee, November 26, 1779, Arch. Md., XLIII, 272-73, Jas. Calhoun to Gov. Lee, November 30, December 6, 1779, Executive Papers, Hall of Records, Annapolis.

Accoutriments [sic] and public Stores..."[24] Apparently, the execution of this order was delayed several months, for in January 1781, Keeports was instructed to repair and remove all except four cannon, to Elk Ridge Landing. The Council feared that the enemy, having taken Richmond, would "visit us as soon as they have accomplished their object in Virginia, which we are satisfied is to plunder, harrass and distress our People..."[25]

Once again, in April 1781, Baltimoreans believed themselves in danger because of enemy action in the Maryland end of the Chesapeake, and took appropriate steps. A warning system was established to prevent a surprise attack on the city, the militia was posted at Whetstone Point and in town, and gun carriages at the fort were strengthened to be serviceable.[26] The withdrawal of the British vessels from the bay relieved Baltimore of its concern for safety, and the militia was dismissed.[27]

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[24]Council to Capt. Geo. P. Keeports, November 9, 1780, Arch. Md., XLIII, 356.

[25]Council to Capt. Geo. Keeports, January 11, 1781, Arch. Md., XLV, 270, Council to Gen. Buchanan, January 11, 1781, Arch. Md., XLV, 271.

[26]Andrew Buchanan to Gov. Lee, April 4, 1781, Executive Papers, Hall of Records, Annapolis, Council to the Inhabitants of Baltimore Town, April 6, 1781, Arch. Md., XLV, 380-81. W. Smith, et al, to Gov. and Council, April 4, 1781, Arch. Md., XLV, 160. Jeremiah Jordan, et al, to Col. Richard Barnes, April 3, 1781, Letters to the Governor and Council, Jan. 1 - Dec. 31, 1781, 160. Council to Andrew Buchanan, April 5, 1781, XLV, 378. Sam. Smith to Gov. Lee, April 12, 1781, Letters to the Governor and Council, Jan. 1 - Dec. 31, 1781, 183. Council to Capt. Keeports, April 14, 1781, Arch. Md., XLV, 400.

[27]Council to Andrew Buchanan, April 26, 1781, Arch. Md., XLV, 417.

With the entrenchment of the British at Yorktown, the enemy's designs upon Baltimore were relaxed, and the center of attention shifted to Virginia. In short, "Maryland is relieved by the Enemy's establishing themselves in York river."[28]

During the following two months of August and September 1781, much of the previously confiscated British-held land on the neck of Whetstone Point was sold at public auction, under the direction of Nathaniel Ramsey, one of the Commissioners for Confiscated British Property. The remainder of the land occupied by the "star fort" and batteries was not sold until the following year, on July 30, 1782.[29] Just before the September 1781 auction, other events transpired which occasioned the earliest known drawings of Fort Whetstone.

In the summer of 1781, British forces, under the command of Lt. General Earl Cornwallis, decided to concentrate their efforts in Virginia, hoping to divide the colonies, cut off their supply lines, and thus bring about a more decisive regional conquest. With the British well established at Yorktown by September 1781, and the expected attack on Baltimore apparently postponed, the importance of stoutly manned defenses on Whetstone Point became secondary to the impending crisis at Yorktown.

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[28]James McHenry to Gov. Lee, August 6, 1781, Letters to the Governor and Council, Jan. 1 - Dec. 31, 1781, 394.

[29]See Appendix I, "Whetstone Point Lands."

Consolidation of the Allied forces in the Yorktown - Williamsburg area, necessitated the overland march of the French army from Newport, Rhode Island, in the summer of 1781. During this overland march, the French army under the leadership of Count de Rochambeau, passed through Baltimore. Assigned to the staff of Rochambeau for this march was one Captain Louis-Alexandre Berthier (1753-1815), who left a descriptive and graphic account of the march, in the form of journals and maps.[30] It is from the Berthier and Rochambeau papers that we have the earliest extant graphic documents pertaining to the defenses on Whetstone Point. The field measurements for the Berthier map (see illustration No. 1) were presumably taken during the Camp à Baltimore sojourn, September 12-15, 1781.[31] Measurements for similar but more elaborate map in the Rochambeau Collection were probably made during the same encampment.[32]

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[30]Papers of Louis-Alexandre Berthier, Manuscripts Division, Princeton University Library, Princeton, New Jersey. The writer acknowledges the assistance and enthusiasm of Howard C. Rice, Jr., Chief, Dept. Rare Books & Special Collections, in making readily available his knowledge of the Berthier Papers.

[31]"Rade et port de Baltimore," 12-15 September, 1781, Papers of Louis-Alexandre Berthier, Group 16, map 8, Princeton University Library.

[32]Map Number 13, Rochambeau Collection, 1779-1780 (?), Library of Congress. It seems probable that this map was actually drawn in September 1781, during Rochambeau's march from Newport to Yorktown, rather than the tentative 1779-1780 date ascribed to it. It is also conceivable that Berthier was the cartographer for the map in the Rochambeau Collection, the map being an improved second copy presented to Rochambeau by Berthier.

Another map, published a decade later (1792), of "BALTIMORE AND IT'S ENVIRONS," was drawn by a "French Geographer," A. P. Folie.[33] This particular map (see illustration No. 2) is obviously more detailed in its treatment of Baltimore than with the "environs," so that the portrayal of Fort Whetstone as a military installation leaves something to be desired.

However, the three drawings accredited to Berthier, Rochambaeu, and Folie, are the only known extant eighteenth century plans of Fort Whetstone. With respect to the earthen "star fort," they are basically in agreement, that is, in plan, for none of them include sections, details or supplementary descriptive data.

Since this study does not deal with the outworks, the enclosed fortification shown on these three drawings may be described as an earthen embankment, conforming to a five-pointed star in plan, surrounded by a ditch, and built a short distance northwest of, and on higher ground than the two roughly parallel shoreline gun batteries on the lower tip of Whetstone Point. None of the plans show guns mounted on the "star fort," though there must have been some in that position prior to 1781. No buildings are shown within the enclosure.

Such a defensive work should be classed as a redoubt rather than a fort, since it was secondary to the more important "water batteries." The "star fort" was hastily thrown up and rudimentary in function, for none of the then available treatises on fortifications recommended the star-plan because of the indefensibility of the

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[33] "Plan of the Town of Baltimore and It's Environs," A. P. Folie, 1792, Cator Collection, Enoch Pratt Free Library, Baltimore.

re-entrant angles between the star-points.[34]

Following the capitulation of Cornwallis on October 19, 1781, the defenses at Baltimore lay in an unimproved, and indeed neglected, physical condition until the early 1790's, when interest in coastal fortifications was revived as a result of difficulties with France.

## Plans for Rebuilding 1793-1795

The hostilities with revolutionary France motivated an elaborate system of coastal defenses along the Atlantic Coast states. The enabling Congressional legislation entitled "An Act to provide for the defence of certain ports and harbors in the United States," was approved March 20, 1794, and granted authority to the President to direct the task of building fortifications and to receive land from "any state" for that purpose.[35]

Prior to this approval, a House committee reported on such harbors "...as require to be put in a state of defence, with an estimate of the expense thereof..." Baltimore's share of the fortification program was limited to $4225.44, intended to cover all parapets, embrasures, battery platforms, redoubt, two magazines and barracks.[36] This sum was not intended to provide for structures of a permanent nature, but rather of earth, sod, and timber.

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[34]J.J.U. Rivardi, military engineer, later criticized the design as follows: "...that redoubt is of a very bad defense; all the fires being oblique and all the intrant [sic] angles indefensible," Rivardi to Gov. Thomas S. Lee, April 13, 1794, Maryland Historical Magazine, VIII (1913), 286-290.

[35]U.S., Congress, The Debates and Proceedings in the Congress of the United States..., 3rd Cong., 1834, IV, pp. 1423-24. Cited hereafter as Annals of Congress, IV.

[36]U.S., Congress, American State Papers, Documents, Legislative and Executive of the Congress of the United States, 1832 [XVI], pp. 61, 63. Cited hereafter as American State Papers, XVI.

Selecting a site for the new fortifications at Baltimore was not a problem. The old fort at Whetstone Point was still the most strategically advantageous location for defense of the harbor. It may be recalled that the Revolutionary War fort had been built on land confiscated from British interests. By 1782, all that land had been sold by the Maryland Council. Although several private individuals owned that end of the Point occupied by the "star fort" and batteries, nothing had been done in the way of improving the site for speculative enterprises. In fact, the Point had been badly disturbed by people digging for "red ochre," i.e., iron ore.

To make this land available to the federal government involved not only an act of the Maryland Legislature, but consent of the property owners as well.[37] Title transfers did not take place until after construction had been started.

While the initial planning which predicated the general extent of Baltimore's defenses lay in the hands of General Samuel Smith of the Maryland Militia, the actual execution of those defenses was entrusted to John Jacob Ulrich Rivardi, a French artillerist and military engineer, who was appointed by the President shortly after the enabling act was approved. Rivardi's commission included the design of fortifications for the cities of Baltimore, Alexandria and Norfolk.[38] His instructions from the Secretary of War, dated

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[37]See Appendix I, footnote 119.

[38]Although Rivardi is usually regarded as a Frenchman, or a French speaking Swiss, it is interesting to note that Moreau de St. Méry, in his Norfolk sojourn, May, 1794, described the fortifications erecting there as being built "under direction of M. de Rivard [sic], an Italian engineer." Moreau de St. Méry's American Journey, [1793-1798], tr. and ed. by Kenneth and Anna M. Roberts (Garden City, N.Y.: 1947), 58.

March 28, 1794, cover the scope and intent of such defenses.[39] The instructions also provided for an agent or assistant to carry out the engineer's plans. Such a man was Samuel Dodge, selected by Major O. H. Williams (Md., 1st Cavalry) as a "very well informed, active, zealous Citizen."[40]

Unfortunately, Rivardi's plans have disappeared, but the covering documents are extant, which reveal his professional criticism of the earthen "star fort" as originally designed, perhaps by schoolmaster Alcock.

> The Star fort never was finish'd intirely [sic] & the ditches are partly filled with the Earth of the breastworks, that [Kind of] redoubt is of a very bad defence; all the fires being oblique and all the intrant [sic] angles indefensible...[41]

Rivardi proposed to correct these defects by constructing two formal bastions to replace points on the western side of the earthen "star fort." This was intended to accomplish two objectives: 1) help prevent an enemy landing on that side, and, 2) allow the important entrant angles to be covered by a fire at right angles.

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[39]"Instructions to John Jacob Ulrick [sic] Rivardi, acting as temporary Engineer in the service of the United States," from H. Knox, Sec. of War, March 28, 1794, American State Papers, XVI, 87-88.

[40]O.H. Williams to Gov. Thos. S. Lee, April 7, 1794, Otho Holland Williams Papers, Maryland Historical Society, Baltimore. Cited hereafter as O.H. Williams Papers. Several other men were considered for the position of superintending the works and disbursing the money. One of these men was Louis Henry Bouteiller, Chief of Brigade of Artillery in the Army of France. Apparently he declined. Also considered was Francois Gardy, a "practical" French engineer, recommended by Rivardi; but Williams selected Dodge instead.

[41]supra, footnote 34.

Upon one of these bastions, he planned a battery to cover the land approaches, said battery to be complemented with a powder magazine on the terreplain of that bastion. He further intended to face the bastion with "1280 feet of strong timber at a shilling a foot."

The appropriation was not sufficient to allow for converting the other star points to bastions. To compensate for this, Rivardi suggested that the undefended flanks of the breastwork (star fort) be protected with chevaux-de-frise, which he estimated would require about 1200 palisades. The bulk of Rivardi's covering letter for his plans deals with improvements to the two lower gun batteries.

To get the work underway, Rivardi "drew...the lines on the ground, and prepared drawings and sections on a large scale," for the use of Superintendent Samuel Dodge. He directed Dodge to begin with the lower battery improvements, since that battery would be most important in the event of an attack.[42]

After Rivardi's departure for Norfolk, Samuel Dodge pursued the work, but various delays prevented him from finishing the "lower work of the fortification" until the middle of September 1794.[43] By October 30, when Dodge's services ceased, he had used all the then available funds.

When Rivardi returned to Baltimore in January 1795, he was obviously disturbed that Samuel Dodge had spent all of the appropriation upon the lower works, and upon "additional barracks &c. which

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[42]J. J. U. Rivardi to Sec. of War, April 20, 1794, American State Papers, XVI, 89.

[43]Samuel Dodge to Gen. Knox, Sec. of War, September 14, 1794, American State Papers, XVI, 92-93. See also S. Dodge to Otho H. Williams, May 19, 1794, O. H. Williams Papers. S. Dodge to Sec. of War, July 8, 10, 1794, American State Papers, XVI, 92.

were not in [Rivardi's] plan..." Furthermore the "star fort" improvements had not been started, thus requiring a "further Supply of 4000 Dollars to proceed in that business as soon as the Season will allow it."[44]

It is clear that Rivardi did not intend to rebuild the old earthen "star fort," or breastwork as he called it, but merely to reshape two of the points into bastions, faced with wood, to be used for batteries. This was intended to protect the lower works from a land attack, since the fort could not be expected to contribute defensively in any other capacity. However there is no evidence that Rivardi's limited proposal was carried out, and the oft-stated assertion that Rivardi designed the brick-faced pentagonal fort, actually built later, is without basis in fact. The government did not even acquire the land occupied by the old "star fort" until 1798 and later.

Even though Rivardi's plans for developing the "star fort" were abandoned, the outer works were to be the objects of additional expense. Since Rivardi's obligations kept him busy elsewhere, another man was appointed to fill the position vacated by Samuel Dodge.[45]

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[44]Rivardi to Gov. John Stone, January 15, 1795, Maryland Historical Magazine, V (1910), 291-292.

[45]In addition to designing other fortifications, Rivardi was a field officer in the regiment of Artillerists and Engineers, a school established May 9, 1794, at West Point. James Ripley Jacobs, The Beginning of the U. S. Army, 1783-1812 (Princeton: 1947), 289.

Alexis De Leyritz was appointed as civilian assistant engineer on May 3, 1795, and continued in that capacity for three and one-half years until his "services ceased," on November 15, 1798. The extent of De Leyritz's services (or his background) are not known. The small sums expended during the first three years of his appointment (less than $3,000), were applied to improving the outer works rather than the "star fort."

## THE BUILDING OF FORT McHENRY 1798-1800

### The Pentagonal Brick-Faced Fort with Five Bastions

The last two years of the eighteenth century were most important, architecturally, at Whetstone Point, for it was during that short period that the first significant changes took place upon and within the "star fort."

The quasi-war with France stimulated the augmentation of all coastal fortifications, and from 1798 to 1800 over $80,000 of federal funds were expended to bring the fort to an effective defensive status.[46] About five months prior to Alexis De Leyritz's termination, another engineer, Major Louis Tousard was appointed to furnish a new plan for improving the fortifications at Whetstone Point. On July 7, 1798, James McHenry, Secretary of War, ordered Tousard to repair to

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[46]Report of the Secretary of War, February 13, 1806, American State Papers, XVI, 194.

Baltimore for the purpose of viewing the existing works with De Leyritz, still temporary engineer, and to "lay down a plan."[47]

The urgency of the order reflected the widespread criticism of Baltimore's defensive works, that is, they were not capable of resisting a land attack, hence the need for a more adequate enclosed fort to supplement the water batteries. Twenty thousand dollars was appropriated for this purpose.

Major Tousard repaired to Baltimore, viewed the existing works with resident engineer De Leyritz, and proceeded to lay down a plan for additions designed for the "protection of the City and Harbour, against any sudden attack from enemy's Ships of War, or Coup de main from a small land force..."[48]

By August 8, 1798, Tousard had finished the plans, elevations, profiles and an estimate of costs for an enlarged fort already known as Fort McHenry. He then delivered them to James McHenry for approval and disposition. Tousard's estimate for the new works totaled $30,963.44. Despite the fact that only $20,000 of government funds were appropriated, the Baltimore City Naval Committee

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[47]James McHenry to Maj. Louis Tousard, July 7, 1798, McHenry Papers, Library of Congress. Cited hereafter as McHenry Papers. McHenry hired Tousard despite President Adams' objections and feelings regarding the use of a Frenchman, because "I could find no other person qualified...," McHenry to Alex. Hamilton, November 19, 1800. McHenry Papers. Prior to this, Tousard had been a field officer with Rivardi in the regiment of Artillerists and Engineers, West Point. Jacobs, loc. cit.

Tousard's remarkable career began with his admission to the School of Artillery at Strassburg, in 1765. Among his other accomplishments, he laid down a plan for the rebuilding of Fort Mifflin, near Philadelphia, 1798. See Tousard to Hamilton, August 7, 1798, The Intimate Life of Alexander Hamilton, Allan McLane Hamilton, ed. (New York: 1911), 326. See also the Tousard-Stocker Papers, Historical Society of Pennsylvania.

[48]Ibid.

accepted the plan, thinking they could engage the "patriotism and cooperation" of the citizens to make up the difference, either in labor or cash.[49] Secretary of War McHenry therefore transferred the power to execute and complete the new defensive works, to the Baltimore Naval Committee, binding them to purchase the necessary additional land, and to follow Tousard's plan. McHenry subjected to their orders the $20,000, until spent, after which time the balance should be raised by local subscription.

As of September 21, 1798, the Naval Committee adopted Major Tousard's plan.[50] One of its first acts was to obtain options for the property occupied by the old earthen "star fort." To build upon that site required the purchase of lots numbered 68-72. One of the proposed bastions projected into lot number 66, so part of that lot was also bought by the Committee.[51]

During property negotiations, construction was pushed on additional improvements to the lower battery under the supervision of Alexis De Leyritz, still retained as temporary engineer and compensated at the rate of two dollars per day. Work continued until the rigors of winter forced cessation, and De Leyritz was released on November 15.[52]

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[49]McHenry to Jeremiah Zollett, et al, August 31, 1798, McHenry Papers.

[50]Robert Gilmore et al to McHenry, September 21, 1798, McHenry Papers.

[51]A part of lot 66 was transferred from William Goodwin, owner, to the United States, on November 6, 1798. Title to lots 68-72 was not transferred from Wm. Goodwin, owner, to the United States, until August 26, 1800. The delay in transferring that all-important 11 acres has not yet been explained.

[52]General Accounting Office, Register of Warrants, 1795 to 1799, Accountant's Office, Indian Tribal Claims Section, April 27, 1799. Cited hereafter as G. A. O.

In February 1799, the Committee reminded Secretary McHenry that the season was approaching when the work ought to be recommenced, but that nothing could be done until another engineer was appointed to carry out Tousard's plan. The Committee wisely thought it unsafe to permit any work unless an engineer was present lest the workmen "diviate from the plan adopted."[53]

McHenry had some difficulty in locating another engineer, but on March 28, 1799, he appointed Messr. John (or Jean) Foncin, French artillerist and military engineer, to the position of "temporary engineer," at two dollars per diem plus travel expenses.[54]

Foncin's appraisal of the problem at Whetstone Point was quite different from that of Major Tousard. On April 12, Foncin dispatched to McHenry a letter critical of Tousard's plan, declaring it "insufficient," outlining certain "imperfections," together with suggestions for a "new plan." Foncin felt that he could not carry Tousard's plan into execution without "hazarding his [own] professional character." McHenry agreed in principle to Foncin's plan provided that, 1) it meet

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[53]Robt. Gilmore to McHenry, February 11, 1799, McHenry Papers.

[54]McHenry to Gilmore, March 22, 1799, McHenry Papers. McHenry requested the Commanding Officer at the fort to furnish quarters for Foncin, McHenry to Capt. S. Morris, March 28, 1799, McHenry Papers. See also McHenry to Gilmore, McHenry to Foncin, March 28, 1799, McHenry Papers, regarding the appointment. Foncin was ordered to devote any spare time to giving lessons to officers of the garrison in "gunnery drawings and fortifications."

Foncin first came to the United States in 1797. Upon his arrival, Moreau de St. Méry noted in his journal for January 20, 1797, "I received M. Foncin, the engineer, arriving [in Philadelphia] from Cayenne," Moreau de St. Méry, op.cit., 277.

with the Committee's approval, and 2) that no further appropriation be required.[55]

The Baltimore Committee, having previously accepted Tousard as an officer of "great professional skill," was naturally embarrassed and confused at Foncin pronouncing Tousard's plan as "impracticable," "defective," and "insufficient." To aggravate the delicate situation, Foncin's "new plan" exceeded the cost estimate of Tousard's proposal.[56]

Apparently Foncin's ability, together with his "modest" and "unassuming" character, was however, the decisive factor, for the Committee admitted to McHenry a willingness to change plans, as follows:

> Mr. Foncin has submitted to us the plan of the works which he deems indispensible to our protection; we have great confidence in his judgment, and should with pleasure cooperate with him in the execution...[57]

The Committee's willingness to "cooperate" with Foncin was contingent upon the government not obligating the citizens of Baltimore for a larger amount than originally pledged. Secretary of War McHenry resolved the difficulties by increasing the appropriation to $30,000, and by thus yielding on the point, he urged the Baltimore Naval Committee to discard Tousard's plan and proceed with the work

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[55]McHenry to Foncin, April 17, 1799, McHenry Papers. See also extracts from Gilmore to McHenry, May 6, 1799, McHenry Papers.

[56]Gilmore to McHenry, May 6, 1799, McHenry Papers. This important letter outlines the whole problem in great detail, with background material and an honest presentation of the Committee's awkward situation. Foncin's estimate for his plan totaled $39,938.34. This estimate was enclosed to McHenry with the above letter. For the estimate in its entirety, see Appendix II. Unfortunately neither Tousard's or Foncin's plan have been located, if they are extant.

[57]Ibid.

lest the "public good" sustain a loss by an inadequate defense.

> I am strongly inclined to give the preference to Mr. Foncin's plan as more effective for defence...[58]

By late July 1799, Foncin's plan for the brick-faced, five-bastioned pentagonal fort enclosing a powder magazine and barracks, was begun in earnest. The new masonry works were built over the crumbling remains of the Revolutionary War earthen "star fort." It was, therefore, John Foncin, rather than Rivardi, De Leyritz or Tousard, who designed the fort and its inner buildings, the architectural appearance of which remained substantially unchanged until after the fateful battle of September 13-14, 1814.

Commensurate with his new responsibility, Foncin was promoted from temporary to full engineer, with a corresponding increase in compensation for his services.[59] With considerable application to the task at hand, Foncin pushed the work during the balance of 1799 and throughout most of 1800, and thus completed the fort previous to his departure in the fall of 1800. Additional sums were needed in 1801

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[58]McHenry to Gilmore, May 10, 1799, McHenry Papers. For other letters dealing with this temporary impasse, see, Gilmore to McHenry, May 18, 1799, McHenry to Foncin, May 25, 1799, and for McHenry's approval, McHenry to Gilmore, July 15, 1799, McHenry Papers. Even after the settlement, Samuel Smith wrote to John Adams, complaining that inadequate funds had been alloted for defending a "City Known to be of the Commercial Consequence of Baltimore." Adams transmitted Smith's request to McHenry on August 5, 1799, adding that "I wish that Justice may be done to that City, and that it may have its proportion of Aid in the fortification of it," Bernard C. Steiner, ed., The Life and Correspondence of James McHenry...(Cleveland: 1907), 406-407.

[59]G.A.O., 1800 to 1802, January 6, 1800.

to complete the buildings, bringing the total government expenditures (since 1794) to $93,664.36.[60]

The earliest surviving graphic document to show the completed brick-faced, pentagonal fort with bastions, is the plan of Fort McHenry (see Illustration No. 3) dated "9th November, 1803."[61] The draftsman has not been identified. However, it was drawn using a scale of toises, a French measure in common use at that time by French cartographers. It seems likely that the draftsman probably copied Foncin's plan, otherwise the measured plan would probably have used feet or yards as a scale. By conversion of toises to feet, the accuracy of the map can be demonstrated.[62]

The exterior sloping walls between the bastions are shown on this map to be 120 feet in length, the side walls of the bastions 40 feet long, and the front or leading edges of the bastions scale 75 feet. While it is not possible to accurately measure the base of the fort today, because the ditch has been filled in, field measurements indicate that the plan is accurate to plus or minus three feet.

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[60]For Foncin's appointment and termination as Engineer, see G. A. O., 1800-1802, March 1, 1800, October 16, 1800. After leaving Baltimore, Foncin went to Boston to work on Fort Independence (See Appendix III). For a yearly listing of expenditures for Fort McHenry, see Report of the Secretary of War, February 13, 1806, American State Papers, XVI, 194.

[61]National Archives, Cartographic Section, Drawer 51, Sheet 1 [H.A.R.P. map no. 1]. Later endorsed and reused by Richard Delafield, Capt. of Engineers, and Gen. Charles Gratiot, Chief Engineer of the Army, September 27, 1836.

[62]Like many early measures, a toise does not have a fixed equivalent in English measures. It is variously equal to six feet, or sometimes 6.4 feet. By comparing certain physical features on the 1803 plan with existing conditions, a toise in this case is known to have been equal to six feet. This plan was carefully measured with a rule divided into 64 parts per inch, each 64th being converted to a decimal fraction of a foot, thus making it possible to convert the scaled features to feet and inches.

The 1803 plan shows a well-defined ditch around the land sides of the fort, but none along the southeast side, facing the harbor. This defect was later corrected. The width of the ditch varied from 35 feet at the bastions to 55 feet, from the brickfaced walls midway between bastions. The ditch was also drained at two points by "water conduits," which have since been obscured or obliterated. A conduit also opened through the rampart, centered along the southeast wall. The fort as originally built, probably had a master drainage system, similar to but less extensive than the one at Fort Washington, Maryland, but the evidence of such a system is not yet available.

The 1803 map is interesting also in that it shows trees planted upon bastions, terreplein, and the parade ground level. The plan shows 36 trees upon the terreplein level, 30 on the bastions (6 on each), and 38 around the parade ground. The function of such extensive planting is not clear, but it probably served several functions; as camouflage and as a ready supply of otherwise expensive firewood in the event of a siege. Old views of Fort McHenry seem to show Lombardy poplars, a tree widely planted in America and noted for its high absorption of ground water, a desirable feature in the earthen and sodded fort.

Since the fort seems to have been designed primarily to defend against a land attack, it is interesting to note that the only gun embrasures shown on the plan of 1803 were located in the bastions, two on each side, but none along the leading edges, since that area was occupied with six trees. The embrasures, therefore were <u>not</u> designed to fire against ships, but to cover the curtain walls and entrant angles of the fort against a scaling-ladder operation. It is obvious that the shore batteries were regarded as the main line of defense,

and the fort as a defense against a land attack from the rear, and as a protective enclosure for the needs of the garrison.

Buildings for the garrison included five structures arranged around the periphery of the parade ground. The functions of these five buildings were as follows (listed by location, right to left upon entering the sally port): 1) Commanding Officer's Office and Quarters, 2) Powder Magazine, 3) Officers' Quarters, 4) No. 1 Soldiers' Barracks, and 5) No. 2 Soldiers' Barracks.

The sally port or entrance to the fort, furnished access at a point midway on the escarpment wall facing the harbor branch of the Patapsco River. The possible exposure of the gateway to enemy fire from the harbor, later led to the building of a ravelin. The sally port was at first approached by a fixed bridge across the ditch, with a short, removable span at the gateway. As originally built, the sally port was not roofed, but was only an opening through the ramparts.[63] The inside faces of the sally port were vertical, probably brick faced, about 13 feet apart, while the length through the opening was about 33 feet. It thus only approximates its size as rebuilt in 1814 (nine feet wide and 35 feet long). Otherwise, there are no architectural features on the 1803 map which indicate anything but a simple opening in the ramparts.

The 1803 map is the only early graphic document to show the flag pole location. It was situated along one side of the parade

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[63]The sally port opening must have looked very similar to that at Fort Pitt, Pennsylvania, erected 1759-61, according to a drawing by Charles M. Stotz. Alfred Procter James and Charles Morse Stotz, Drums in the Forest (Pittsburg: 1958), 171.

ground, and would have been encountered to the near right upon entering the parade ground from the sally port.[64]

Another map of Fort McHenry, drawn ca. 1806 by Captain John B. Walbach, is similar in most respects to the 1803 map except for certain discrepancies, such as the number of trees indicated. Other differences reflect improvements and changes to the buildings within and outside the fort.

The fort remained virtually unchanged, in fact became somewhat neglected, until the defensive preparations preceding the 1814 bombardment.

## THE WAR OF 1812

Although the fortifications at Whetstone Point had never been the objective of enemy action, its presence and strategic location had been an important deterrent to hostile designs upon the Baltimore harbor since Revolutionary War times. With the War of 1812, the fortifications once again became the object of improvements calculated to deter the British navy.

Beginning in March 1813, preparations were many months in the making. Certain defects were corrected and several modifications were intended to up-date the defensive preparedness of Fort McHenry.

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[64]Two hewn-oak braces for this flagpole were found during the 1958 archeological explorations, by G. Hubert Smith, archeologist. Since the flagpole was replaced and moved on several occasions, its exact location during the writing of the "Star-Spangled Banner," in 1814, is not certain. However, most of the evidence seems to substantiate the 1814 location as unchanged from its position as shown on the 1803 map.

The indefensibility of the gate doors was emphasized by General Samuel Smith in a letter to the Secretary of War,

> The gate [door] is of Pine, and I think might be knocked down by a very few strokes of an axe.[65]

Smith also requested that an engineer be sent to "compleat the fortifications." Major Lloyd Beall, Acting Agent of Fortifications at Fort McHenry, was ordered to carry out some minor improvements, until an engineer could be dispatched to that place. Beall filled the embrasures in the bastions, and "platformed" the bastions sufficiently high to allow the cannon to be fired en barbette. He was also instructed to protect the sally-port gateway with a brick wall "...in front of the Gateway to be 6 feet high..."[66] This brick wall, or "traverse," was not built, however, since any such protective device obviously called for the talents of a military engineer. Once again Samuel Smith complained to the Secretary of War that construction before the sally port could not commence until an engineer be sent to "lay off the work."[67]

The situation seemed to be desperate, and pressure was exerted from several quarters. Captain John Montgomery, Maryland artillery officer, wrote Albert Gallatin, Secretary of the Treasury, outlining the need for an engineer's presence at Fort McHenry, and recommended

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[65]Library of Congress, Manuscript Division, Samuel Smith Papers, S. Smith to Gen. John Armstrong(Sec. of War), March 18, 1813. Cited hereafter as S. Smith Papers. See also Smith to Armstrong, March 16, 1813, S. Smith Papers.

[66]U. S. Military Academy, J. G. Swift Papers. Col. Swift to Maj. Lloyd Beall, March 27, 1813.

[67]S. Smith to Gen. Armstrong, March 29, 1813. S. Smith Papers.

Maximilian Godefroy as a "Man [of] Science, abilities, & an able engineer who might [be] most usefully [sic] at this place."[68]

The War Department finally ordered Captain Samuel Babcock of the U. S. Engineers, to Fort McHenry, but not until April 26, 1813. In the meantime, Colonel Decius Wadsworth (formerly of the Artillerists and Engineers) visited the fort, described its defects, and suggested at least one important change for the defense of the unprotected sally port entrance. For this Wadsworth planned a brick-faced ravelin, and its completion was apparently left in the hands of Captain Babcock, upon his arrival in early May.[69]

Babcock's orders also included completion of those changes begun under the direction of Major Beall.[70] On December 1, 1813, engineer

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[68]J. Montgomery to A. Gallatin, April 1, 1813. Albert Gallatin Papers, New York Historical Society. Godefroy's services as military engineer were utilized in the defense of Baltimore, but not at Fort McHenry until after the battle, when he designed two powder magazines for the outworks (see note 76 for biographical reference to Godefroy).

[69]Decius Wadsworth to John Armstrong, April 13, 1813. National Archives, Records of the War Department, Record Group 156, Office of the Chief of Ordnance, Selected Pages, Letters and Endorsements Sent to the Secretary of War, 1812-1817. Wadsworth described Fort McHenry as a "...regular Pentagon, without Ditch or Covertway, too reduced in its Dimensions to be Capable of a long Defence against a regular attack, but abundantly Secure against an Assault & well enough adopted to protect & cover the detached Water Battery in which the principal Defence against shipping must rest." See also Wadsworth to Armstrong, April 26, May 3, 1813, National Archives, Records of the War Department, Record Group 107, Secretary of War, Letters Received. Wadsworth believed that a ravelin probably constituted a part of the original design for the fort.

[70]Col. J. G. Swift to Capt. S. Babcock, May 26, 1813, National Archives, Records of the War Department, Record Group 77, Office of the Chief of Engineers, Selected Pages from Letters to Officers of Engineers, July 4, 1812 - February 20, 1869. Cited hereafter as NA RG 77 OCE SPLOE 1812-69.

Babcock wrote General John Armstrong that his work at Fort McHenry was complete, including not only the mounting of 21 cannon on the fort, but apparently the construction of the ravelin as well.[71]

Similar in design to eighteenth century French ravelins, it was triangular in plan, erected in front of, but not connected to the entrance which it protected. The ravelin was brick faced, about eight feet high with battered walls, and measured about 132 feet along each of the leading edges. A ditch 28 feet wide, complete with banquette, flanked the two leading edges, and was made a part of the main ditch around the fort. Since the ravelin blocked access to the sally port bridge, an opening was left in the north wall of the ravelin, and a bridge across the ditch at that point completed the passageway.[72]

The fort did not undergo any further modification until after the historic bombardment of September 13-14, 1814. The physical appearance during that dramatic episode of the war, while not very different from that shown on the 1803 and ca. 1806 maps, can thus be briefly described as follows:

FORT McHENRY in 1814

At the time of the bombardment (see Illustration No. 4), Fort McHenry was a regular pentagonal fortification, faced with masonry walls of brick about 12 feet high, battered, capped with dressed coping stones and quoining at the salient points. The fort was surrounded by a well-defined, dry ditch varying in width (between the bastions and curtain walls) and about five feet deep.

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[71]Capt. Babcock to Sec. of War, December 1, 1813. National Archives, Records of the War Department, Record Group 107, Office of the Secretary of War, Selected pages from Registers of Letters Received, January 1813 - August, 1821.

[72]Access through the side wall of the ravelin was not a unique feature of Fort McHenry. A similar arrangement was used at Fort Pitt, Pennsylvania, built 1759-61. See James and Stotz, op.cit., 171.

The parapets were sodded earth, planted with trees, and designed to accommodate cannon fired en barbette. The terreplein level was separated from the parade ground level by another sloped earthen bank, also sodded, with an open drainage line at that juncture. The five bastions were platformed with wood; the embrasures had been filled. The ravelin was an earthen mound, faced with brick, with stone quoining at the three corners of its triangular plan. It also was platformed behind the front corner. The ditch serving the ravelin was crossed with a wooden trestle bridge, giving access to an opening in the ravelin wall. Having passed through the ravelin, one approached the protected bridge over the main ditch before the sally port entrance. That bridge was also wooden, resting on brick piers, with a wooden railing. Just before gaining entrance to the main doors, was a short, removable span, apparently not a draw bridge.

The sally port was an unroofed passageway cut through the ramparts. Passing through the sally port, the parade ground was immediately at hand, on the same level. Access to the terreplein was by earthen ramps situated to the right and left of the inner sally port opening.

Seven buildings were distributed around the parade ground, listed by function, beginning just north of the sally port 1) a small Guard-House, about 18' by 20', apparently one story high, 2) Commanding Officer's Quarters and Office, 18' by 48', one and a half stories high, with gable roof and dormers, servants' garrets in the attic space, a cellar kitchen below, 3) Powder Magazine, 20' by 31', 4) Officers' Quarters, 18' by 61', one and a half stories, with a small cellar kitchen, 5) No. 1 Soldiers' Barracks, 22' by 91', one and a half stories, gable roof with three dormer windows, and a cellar kitchen under the north room, 6) a small cistern house 17' by 30', one story, hip roof, with a small porch, 7) No. 2 Soldiers' Barracks 22' by 98', one and a half stories, gable roof, with three dormer windows, and cellar kitchen under the east room.

The all-important flagpole was apparently situated between the Guard-House and Sally Port, on the parade ground. There was also a well in the courtyard, and trees in front of the buildings.

After the September 13-14 bombardment, Lt. Colonel George Armistead Commanding Officer of the fort, estimated that between 1500 and 1800 bombs were fired by the enemy, and that about 400 of these landed within the works. It has been commonly believed that he meant within the enclosed fort, but he probably meant within the precincts of the fort and outlying gun batteries. At 2:00 a.m., Wednesday morning, September 14, a 24-pounder on the southwest bastion of

the fort, was blown asunder by a shell, which killed one officer and wounded several men in Captain Jos. Nicholson's company of volunteers.

Armistead's report mentions that two of the buildings were materially damaged, but does not state which buildings.[73] The powder magazine is known to have sustained a direct hit. The walls of the fort apparently suffered extensive damage from bomb fragments, and one observer, visiting the fort in 1818, commented at that date, that "the old walls still exhibit the scars of the attack."[74]

There was not a single bombproof building in the garrison, nor were there any casemates for the protection of the men. During the attack, men were forced to withdraw from the fort for lack of bombproof shelter. After the bombardment, this defect was the object of a vigorous program to render the fort safe in the event of renewed hostilities. The prevailing belief that the British would return motivated extensive additions and improvements to the fort, its buildings, and outer works.

Following the assault, the Baltimore City Committee of Vigilance and Safety, together with the militia, cooperated in an attempt to prepare the fort for the possibility of another bombardment. The Committee requisitioned the necessary materials, and the militia released its "mechanics" from military duty for the work of "bombproofing" the powder magazine, the well, and the sally port. The attack had also pointed out the need for "bombproof barracks" or casemates.

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[73]Report of attack on Fort McHenry, by Lt. Col. George Armistead, September 24, 1814. John Brannan, Official Letters of the Military and Naval Officers of the United States, during the war with Great Britian, in the Years 1812, 13, 14, and 15 (Washington: 1823), 439-441.

[74]John M. Duncan, Travels Through Part of the United States and Canada in 1818 and 1819 (New York: 1823), vol. 1, 225-26.

Almost immediately a great force of laborers and carpenters began work on underground casemates, to be located under the ramparts, on each side of the sally port. However, the obvious haste and poor supervision of the project forced the cessation of activity. As a result, on September 29, 1814, General Smith reported to James Monroe, Secretary of War, as follows:

> The Bombproof for the preservation of the Men within the fort had been completed under the direction of Captain Babcock, and timber had been prepared at a great expense. He has changed his plan & the digging & timber is an expense lost to the public.[75]

Smith further stated that both Captain Babcock and Colonel Armistead were too ill to properly superintend the work, and that he, Smith, knew nothing about military engineering, "...nor have I any person that even pretends to knowledge. I therefore pray you to send me an Engineer." Smith complained that work was being done with such purposeless haste, that much of it would have to be redone.

Apparently as a result of this plea, General Smith received the necessary professional assistance in the person of Maximilian Godefroy, a French architect and engineer, then residing in Baltimore.[76] Godefroy planned improvements for the outer works including two small powder magazines, and also designed bomb-proofs for the fort. There is no evidence that the bomb-proofs or casemates as built, are the result of Godefroy's plan and supervision, but one

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[75]S. Smith to James Monroe, September 29, 1814, S. Smith Papers.

[76]For a brief biographical account, see Fiske Kimball, "Godefroy, Maximilian," Dictionary of American Biography, ed. by Allen Johnson and Dumas Malone (New York: 1931), vol. 7, 343.

document mentions the forthcoming return of Godefroy after an absence "...when he will finish the design of the bomb-proofs for this place."[77]

The bomb-proofs which were previously designed for timber construction to be covered with earth, were thus changed (probably by Godefroy) to underground rooms with thick walls and vaults of brick. This addition to the existing defenses was begun about a month after the British bombardment of September 1814.

These underground casemates (each measuring about 18 by 50 feet), one on each side of the gateway, were built with ventilators through the terreplein, but not lighted. The sally port with its brick vaulting and adjoining casemates as we see them today are substantially a product of the post-bombardment repair and construction work, although some changes were made in 1835 and 1857.

The 1819 Plan of Fort McHenry (see Illustrations Nos. 5-7) is the first graphic representation of the fort in its improved post-bombardment condition. Drawn by William Tell Poussin, Captain of Topographical Engineers, it is the first accurate measured drawing of the fort.[78] In most instances the limit of error is less than one foot. As such, this plan is a vitally important document. From it can be deduced the physical changes to the fort following the attack.

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[77]Capt. Frederick Evans to S. Smith, October 10 [?] 1814, S. Smith Papers.

[78]National Archives, Cartographic Section, Washington, Drawer 51, Sheet 2, "Reconnoitring of Chesapeake Bay, STATE OF MARYLAND, Plan and Profiles of Fort McHenry, 1819," drawn by William Tell Poussin, Captain Topographical Engineers [H.A.R.P. map no. 4]. Poussin (a Frenchman) wrote and published extensively on his impressions and experiences in the United States. For an important autobiographical work, see Guillaume Tell Poussin [1794-1876], Les Etats-Unis D'Amérique... (Paris: 1874).

The major changes that took place were the "bombproofing" of the sally port with a brick-vaulted roof, the addition of casemates under the ramparts on each side of the sally port, the strengthening of the main powder magazine, the "bombproofing" of the well (with a brick vault), the addition of a boundary wall and sea wall, the addition of two powder magazines in the out works,[79] extension of the lower gun battery, and the addition of a postern through the ramparts. Strangely, the 1819 plan does not indicate the existence of trees on the fort, though they were not removed until the 1830's.

The war had drawn to a close in December 1814, without producing any further attacks upon the defenses of Baltimore. With the fort thus improved, the garrison took on a more peaceful aspect. An 1822 inspection report commented that,

> ...One half the Parade [ground was] taken up in a flower garden. A considerable number of shot instead of being piled, form the borders of walks.[80]

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[79]These two powder magazines were designed by Godefroy, and were mentioned in an advertisement. See Federal Gazette (Baltimore), September 25, 1815. They are shown in the outworks of the 1819 Poussin map.

[80]Unsigned Inspection Report of Fort McHenry, September 22, 1822, National Archives, Records Group 159, Office of the Inspector General, Selected pages from Inspection Reports, 1814-1842.

A foreign visitor to the dormant fort, ca. 1825, described it rather disdainfully, as follows:

> The fort itself is very small, and ill-shaped; a pentagon with five little bastions, where at most but three large guns can be mounted; in front of the entrance is a little ravelin which defends nothing. There is no counterscarp; the ramparts are sodded. The fort is separated from the land by a [boundary] wall, which might rather prove injurious than advantageous. The fort is in a decayed condition, and is to be abandoned on account of its unimportant situation. The engineers intend to construct new fortifications several miles farther off in the Chesapeake Bay. Moreover, the situation of this fort is so unhealthy that the garrison leave it during the summer.[81]

Fort McHenry was not abandoned, but retained as a second barrier or accessory to the system of coastal fortifications contemplated in the 1820's by the Board of Engineers.

## LATER IMPROVEMENTS 1829-1857

In 1821, the U.S. House of Representatives had requested the Secretary of War to report to the House on the progress made toward determining new sites and plans of fortifications for the eastern coast of the United States, with an eye toward possible reduction in the expense of defending the "Atlantic frontier." The Board of Engineers submitted a report which in part, mentioned the projected sites for works farther out in the harbor approaches to Baltimore. These new sites were intended to turn the enemy

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[81]Karl Bernhard, Duke of Saxe-Weimar Eisenach, Travels Through North America during the years 1825 and 1826 (Philadelphia: 1828), 164. In later years, a new fort was built several miles farther out in the Patapsco River. That defensive work, designed by Lt. Robert E. Lee, was named Fort Carroll, after Charles Carroll, distinguished Marylander and signer of the Declaration of Independence.

before gaining such close proximity to the harbor, since Fort McHenry, they claimed, "has no influence whatever over an attack by land, and cannot even secure the city and harbor from bombardment."[82] That report was modified in 1826, when the engineers decided to retain Fort McHenry as a "second barrier" to the proposed outlying defenses.[83]

From an artilleryman's point of view, Fort McHenry by the 1820's was essentially obsolete in every respect, being neither strategically situated nor equipped to match the improved naval armament of that period. However, the decision to keep the fort forced a program of up-dating to compensate for its defects. The years of neglect created a maintenance problem and it was necessary to stabilize and repair the post before new works could be started.

While "preservation of the men" had been the primary purpose behind much of the post-attack improvements, especially the sally-port vaulting and the vaulted bomb-proof casemates, the brick vaulting remained exposed to the weather. It was soon apparent that "preservation of the masonry" from the elements would entail counter-protective measures. An 1829 examination of the fort revealed that,

> The bombproofs under the rampart, on each side of the gateway, leak very much, in consequence...of there being no roofs over them. The repairs necessary

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[82]"Fortifications," Department of War, February 12, 1821, U.S. Congress, American State Papers, Documents, Legislative and Executive, of the Congress of the United States (Washington: 1834), vol. XVII, 304, 306.

[83]"Revised Report of the Board of Engineers on the Defense of the Seaboard," March 24, 1826, U.S., Congress, American State Papers, Documents, Legislative and Executive, of the Congress of the United States (Washington: 1860), vol. XVIII, 283, 291.

for them would be a thin coat of plaster or water cement on the outside of the arches and a wash of cement on the walls of the interior.[84]

The brick vaulting over the sally port also leaked, and it was proposed to cover it with a wooden roof. This same report noted that much of the scarp walls of the fort needed repointing, and that to proteet the brick masonry from water and frost damage would necessitate a "thick wash of water cement...on the face of the scarp..." The materials and labor to preserve the masonry were listed as follows:

| | | |
|---|---|---|
| 30 Barrels Water cement | -- at $3½ -- | $105 |
| 15 do Lime | -- " 2 -- | 30 |
| Masons hire 30 days | -- " 2 -- | 60 |
| Soldiers " 200 " | -- " 15 cents | 30 |
| Washbrushes and contingencies | -- | 25 |
| | | $250 |

This work of repairing and coating the scarp wall was accomplished under the direction of Captain James W. Ripley, 4th Artillery at Fort McHenry, during the summer of 1829. Additional coats were also applied at later dates. The bricks over the casemates were found to be so saturated with water that a coating of "water cement" would be ineffective. Captain Ripley then recommended a covering of wood as being the "cheapest and most effectual means of preserving [the bombproof casemates]."[85] General Gratiot,

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[84]Capt. John Lind Smith, Engineers, to Gen. Gratiot, April 17, 1829, National Archives, Records of the War Department, Office of the Chief of Engineers, Selected Correspondence Relating to Fort McHenry, Maryland, 1811-37. Cited hereafter as NA RG 107 OCE SC FT-MC 1811-37.

[85]Capt. J.W. Ripley to Gen. Gratiot, July 25, 1829, NA RG 107 OCE SC FT-MC 1811-37.

Chief Engineer of the Army, then proposed that Ripley use sheet-lead instead of wood, and authorized him to procure the lead.[86] The cost of this repair was estimated at about $500, but it is not known whether the lead was actually installed.

During the years 1829-30, all the officers' quarters and soldiers' barracks within the fort were raised in height to two full stories. Those buildings were also equipped with two-story, full-length piazzas along the front of each building. Other buildings outside the fort were also improved and enlarged at that time.

On December 17, 1830, Major M. M. Payne, Commanding Officer at Fort McHenry 1828-31, reported to Gratiot that both bridges (gateway and ravelin) needed new flooring and that the gateway doors were so decayed and broken as to require to be made anew, the work to be done as usual, "by the artificers of the garrison."[87]

His estimate of the work includes yellow pine joists and planking for the bridges, with three inch oak planks for the gateway doors. The materials estimate totaled $288.08. General Gratiot requisitioned three hundred dollars for the purpose.[88]

Another defect received consideration in 1833. The sloped earthen bank which separated the terreplein from the parade ground level, had been a constant source of irritation with respect to the

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[86]Gen. Gratiot to Capt. Ripley, July 27, 1829, National Archives, Records of the War Department, Record Group 77, Office of the Chief of Engineers, Miscellaneous Letters Sent, Volumes 1-25, 1812-1872. Cited hereafter as NA RG77 OCE LS 1812-72.

[87]Maj. Payne to Gen. Gratiot, December 17, 1830, NA RG107 OCE SC FT-MC 1811-37.

[88]Gen. Gratiot to Maj. Payne, December 18, 1830, 1812-72. NA RG77 OCE LS 1812-72.

health of the garrison. The sloped bank discharged rainwater around the foundations and into the cellars of the barracks buildings, contributing to the dampness of the cellars, and consequently to rotting of the wooden floors above.

Brevet Colonel John B. Walbach (author of the map of ca. 1806), Commanding Officer at Fort McHenry 1832-33, proposed to replace the sodded slope with a brick wall, "to ensure a better circulation of air around the quarters."[89] Though the idea was approved, stone was substituted for brick. On September 30, 1833, General Gratiot charged his nephew, Lt. Henry A. Thompson with the direction of the work. Gratiot believed the stone to be "cheaper for a wall of this magnitude," and he suggested that Port Deposit (Maryland) stone be secured for the job.[90]

The 519 feet of stone wall, 7'-6" high, to be laid without batter, complete with foundation and coping, was estimated to cost $4,219.44.[91] It was subsequently built under the supervision of Lt. Thompson, and has been an important factor in eliminating the water runoff into the fort.

In 1835, guard-rooms were added to each side of the sally port, but the story of those additions goes back to 1831, when various officers at the post agitated for removal of the temporary guard-house (built ca. 1815), which was hidden behind the bombproof

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[89]Col. Walbach to Col. Jones, September 21, 1833, National Archives, Records of the War Department, Record Group 77, Office of the Chief of Engineers, Letters Received, 1826-1837. Cited hereafter as NA RG77 OCE LR 1826-37.

[90]Gen. Gratiot to Lt. Thompson, September 30, 1833, NA RG77 OCE LS 1812-72.

[91]See drawing and detailed estimate for this wall, National Archives, Cartographic Section, Record Group 77, drawer 51, sheet 4, n.d.

well, into the sally port area to improve the functional use of that station.[92] While this was a logical position for the guard-house, the suggestion was countered with inertia and parsimony from the Chief Engineer of the Army. Several proposals to build new guard-rooms adjacent to or in front of the sally port were denied.[93]

In an 1834 report by Lt. Thomas J. Lee, Artillery, to General Thomas S. Jesup, Quartermaster General, the guard-house was described as a "source of great inconvenience," being located between the Men's Barracks and behind the well. This fact, together with the poor condition of its roof and floor, brought some action upon the matter.[94]

On July 9, 1835, Lt. Lee prepared an estimate for adapting the sally port vicinity to accommodate guard-house and prison facilities. He proposed to build a room on each side of the sally port and over the bomb-proofs. These rooms were to be accessible only from the courtyard. A major concern was that the new guard-house should not appear from the exterior of the fort. To work within this limitation, Lt. Lee proposed cutting away fifteen feet (in length) of the bomb-proof rooms on each side of the sally port. A smaller bomb-proof room could then be built in its place, thus reducing the one large bomb-proof casemate (approximately 18' by 50') to two rooms of dif-

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[92]Maj. Payne to Gen. Jesup; April 20, 1831. National Archives, Record Group 92, Records of the War Department, Office of the Quartermaster General, Selected Pages from Registers of Letters Received, 1818-57. Cf. Capt. Ripley to Gen. Gratiot, April 22, 1831. NA RG107 OGE SG FT-Mc 1811-37.

[93]Gen. Gratiot to Capt. Ripley, April 30, 1831. NA RG77 OCE LS 1812-72.

[94]Lt. Lee to Gen. Jesup, November 19, 1834. National Archives, Record Group 92, Records of the War Department, Office of the Quartermaster General, Consolidated Correspondence File, 1794-1915, Fort McHenry. Cited hereafter as NA RG92 OQM CCF 1794-1915.

ferent size, connected by a doorway. The entrance arches to the bomb-proofs from the sally port were to be preserved. This alteration accounts for the present constricted passageway into the casemates. Lee planned to cut away about 1700 cubic feet of brick on each side, and build a new arch 15 feet long, eight feet wide, seven feet high and 18 inches thick.[95] This work, as executed, followed his proposal quite closely. His estimate for labor and materials totaled $2034.00. The plans, which he submitted with the estimate, show that the top of the sally port at that time was surrounded by a railing with flanking staircases on each side giving access from the ramparts to the roof. There was also a railing along the top of the parapet of the ramparts. While these elements no longer exist, they were used as an observation platform for guard purposes, since the roof of the sally port was a good vantage point for a tour of guard-duty.

The two new guard-rooms (with a prison in the rear of each) were begun about August 15, 1835 and finished that same year.[96]

On November 25, 1835, Lt. Henry A. Thompson, who had stayed on at the fort to direct other improvements, notified General Gratiot that he had commenced cutting down the trees growing in the fort (planted ca. 1800) and on the ravelin. He promised that this military logging operation would be dispatched in short order.[97]

During the following September 1836, General Gratiot and Captain Richard Delafield of the Engineers, inspected Fort McHenry

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[95]Lt. Thomas Lee's "Estimate [and Plans] of Materials and Cost of Building a Guard House &c. at Fort McHenry, Md.," July 9, 1835, NA RG92 OQG CCF 1794-1915.

[96]Report on the Condition of Public Quarters at Fort McHenry, by Lt. Thomas Lee, September 30, 1835, NA RG92 OQG CCF 1794-1915.

[97]H.A. Thompson to Gen. Gratiot, November 25, 1835, NA RG77 OCE LR 1826-37.

with an eye to improving its artillery emplacements.[98] As a result of this meeting, Captain Delafield prepared elaborate plans for an extensive outer gun battery to replace the abandoned shore-line batteries. He also proposed that the bastions of the fort be "restored" with its gun embrasures as per the 1803 plan.[99] Both Delafield and Gratiot endorsed the 1803 plan on September 27, 1836, with that purpose in mind. There is no evidence however that the embrasures were "restored."

Delafield also detailed a breast-height wall of brick to separate the earthen parapets from the terreplein, thus replacing the short, sloped bank which had formerly served that purpose. This three foot high brick revetment wall was built by Thompson and finished by the end of October 1837.[100] Its appearance is practically unchanged to the present time. Thompson also repaired the scarp wall, by replacing defective bricks and repointing the entire wall. He removed all the coping stone and replaced it with Patapsco granite, a local stone. During this same period 1836-40, Thompson supervised the erection of a new outer battery, and a new sea wall; and he acquired additional property for the government. Some of Thompson's improvements are shown on a plan drawn by him in 1837.[101] This plan shows the intended

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[98]Gen. Gratiot to Capt. Delafield, September 12, 1836, NA RG77 OCE SPLOE 1812-69.

[99]National Archives, Cartographic Section, Record Group 77, drawer 51, sheet 8, drawn by Richard Delafield, Captain of Engineers, September 27, 1836, endorsed by Gen. Gratiot [H.A.R.P. map no. 6].

[100]H.A. Thompson, agent of fortifications, to Gen. Gratiot, October 24, 1837, NA RG107 OCE SC FT-MC 1811-37.

[101]Fort McHenry, Md., 1837, by H. A. Thompson, Superintendent, National Archives, Cartographic Section, Record Group 77, drawer 51, sheet 9 [H.A.R.P. map no. 24].

incluaion of two gun platforms in each bastion, but apparently they were not installed.

Thompson also directed the closing of the gateway through the ravelin and the elimination of the bridgea, in 1838. Access to the sally port wss effected by means of a ramp from the ditch, much as we see it today.

Thompson's Annual Report submitted October 17, 1839, noted that the breast-height wall had been raised 18 inches, covered with zinc and coped with sandstone, the scarp wall coated with a thick cement wash (traces of which are still visible), a breast-height wall built on the ravelin and traverses laid for seven guns on the ravelin.[102]

On December 4, 1839, after a three year period of extensive additions and alterations, the U. S. Engineers pronounced the work complete and turned the fort back to the Army. The appropriations, expenditures, and compensation of agents at Fort McHenry for the years 1836-1839 totaled $136,062.06. Although various minor alterations and repairs to the ~~"star~~ fort" have been made since 1840, no significant changes are evident.[103]

The last major change in the sally port vicinity was the result of the proceedings of a board of officers which convened at Fort

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[102]H. A. Thompson to Col. Totten, Chief Engineer, October 17, 1839, National Archives, Records of the War Department, Record Group 77, Office of the Chief of Engineers, Letters Received, 1838-1866. Cited hereafter as NA RG77 OCE LR 1838-66.

[103]For a full narrative of work done during those years, see "An account of such Repairs to Fort McHenry as appears on the books of the Engineer Department," by Capt. Frederick A. Smith, Engineers, May 5, 1840, NA RG77 OCE LR 1838-66. See also a map of Fort McHenry, drawn by Capt. Frederick A. Smith, May, 1840, National Archives, Cartographic Section, Record Group 77, drawer 51, sheet 14 [H.A.R.P. map no. 8].

McHenry on May 21, 1857.[104] The purpose of this meeting was to discuss the crowded prison conditions and to seek s remedy. The proceedings outlined the problem as follows:

> The prisoners from this post and from other stations are from twelve to thirty men and are so crowded and deprived of proper breathing air or sleeping space as to be detrimental to health.

The report further mentioned that "casual" prisoners were forced to be confined with "confirmed delinquints," resulting in a "constant deterioration of morals."

The bosrd concluded that the prison rooms located in the guard-rooms over the bomb-proofs to be not only contracted but unsafe, and "entirely inadequate to maintaining the discipline of a post exposed as is this to the temptations of a large city..."

This report, plus the fact that four prisoners had dug their way through the walls, was responsible for the construction of new prison facilities. This was to be accomplished by building an additional room on each end of the existing guard-rooms, to be placed over the bomb-proofs as before, but without any alteration to the arch below. The room to be added to the north end would simply serve as a guard-room, whereas the southern addition would be divided into a passageway with three small prison cells, "ventilated by iron doors," the whole to cost about $1400.[105]

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[104]"Proceedings of a Board of Officers convened at Fort McHenry, Md.," May 21, 1857, NA RG77 OCE LR 1838-66.

[105]"Estimate of cost of building Guard House at Fort McHenry, Md.," by Maj. I. L. Donaldson, June 13, 1857, NA RG77 OCE LR 1838-66.

Plans and covering letters for these extensions were transmitted July 27, 1857, and included details for hollow walls to render the space more habitable "...by freeing it from damp.[106] Approval for the work was issued August 10, 1857, and work began almost immediately.[107] These additions were completed in October, and represent the last substantial changes to the sally port complex. Small windows and vent holes were bricked up but no structural changes have taken place since 1857. The three small prison cells added st that time were used during the Civil War, and one Confederate officer has left a vivid account of his experiences in the smallest of the three cells, describing the dampness and filth in that place.[108]

In the late nineteenth century, such dsmp places were subject to medical criticism. This criticism was especially aimed at the

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[106]"Fort McHenry, Sketch of proposed changes in prisons...," received with Maj. Brewerton's letter of July 27, 1857 [H.A.R.P. Map no. 21]. National Archives, Record Group 77, Records of the War Department, Office of the Chief of Engineers, Map File.

Cf. Maj. Brewerton to Gen. Totten, Chief of Engineers, July 27, 1857. NA RWD RG77 OCE LR 1838-66.

[107]Gen. Totten to Maj. Brewerton, August 10, 1857. National Archives, Record Group 77, Records of the War Department, Office of the Chief of Engineers, Selected Pages from Letters to Officers of Engineers, July 4, 1812-February 20, 1869.

[108]"Henry Hall Brogden -- An Account of His Experiences During the [Civil] War." A personal narrative written by H. H. Brogden which includes his imprisonment at Fort McHenry, 1863-64. Original MS owned by Mrs. Charles K. Lennig, Jr., 45 Woodale Rd., Philadelphia 18, Pennsylvania (copy at Fort McHenry).

unhealthy use of casemates or "bombproofs" for habitation. Since the Engineers were being taken to task for designing such uninhabitable spaces, Lt. Colonel W. P. Craighill of the Engineers, felt constrained to state that the criticism was unjust, as follows:

> The casemates were never intended by the Engineers to be occupied except in time of war, and it is probable that ...the medical officers would not be unwilling to shelter themselves in them when shells &c. from a fleet were flying.[109]

## CONCLUSIONS

An evaluation of the available documents makes it obvious that Fort McHenry is not the design of any one engineer or architect. Felix Louis Massenbach and James Alcock designed the Revolutionary War fortifications on Whetstone Point, but by 1814 those defences had been so completely altered that their influence upon the design of Fort McHenry itself was negligible. John Jacob Ulrich Rivardi, French artillerist and military engineer, is usually credited with the architecture of Fort McHenry, but this is a gross error and stems from the widely known publication of his letters pertaining to the 1794-95 improvements at Whetstone Point. Samuel Dodge, fortifications agent, and Alexis De Leyritz, temporary engineer, were successively responsible for continuing some of Rivardi's designs, but neither of them made any contribution to the fort itself, but rather to the lower gun batteries.

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[109] Lt.-Col. Craighill to Gen. Fry; Baltimore, April 30, 1885. National Archives, Record Group 77, Records of the War Department, Office of the Chief of Engineers, Letters Sent Baltimore District Office, February 4, 1878 - February 28, 1900.

Major Louis Tousard, French artillerist and military engineer, was commissioned in 1798 to design a fort which could afford defense against a land attack from the rear.[110] Although his plan was approved, no work in that direction was accomplished. Only with the appointment of John (or Jean) Foncin, another French gunnery officer and military engineer, did a plan for the masonry-faced, pentagonal fort materialize from a crumbling earthen star redoubt. Furthermore, Foncin personally carried his plan into reality. Except for the later addition of a ravelin (which may have been in his original design) and changes in the embrasures, his design of the fort and inner buildings remained unchanged until after the Battle of Baltimore in 1814. Foncin, "a French Gentleman," was praised by James McHenry for demonstrating

> that evidence of ability in his profession by correcting errors of much consequence, in the original plan of the works, as well as assiduity in Superintending and directing their progress...

McHenry considered him "worthy of trust, competent to what he has undertaken, upright and unassuming in his conduct."[111]

Foncin's own views concerning the two years, 1799-1800, which he spent laying out and directing the erection of Fort McHenry, are ably expressed in a letter to McHenry, written ~~only two months~~ just previous to the bombardment:

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[110]For Tousard's theoretical writings on fortification, see Louis De Tousard [1749-1821], American Artillerist's Companion or Elements of Artillery... (Philadelphia: 1809), vol. 1, chap. 25, "On Fortification;" chap. 26, "Summary Essay on Fortification;" chap. 27, "Of Practical Fortification."

[111]James McHenry to Samuel Dexter, Sec. of War, May 29, 1800. McHenry Papers.

...and I still keep alive the flattering remembrance of the Satisfaction of the citizens of Baltimore, while I was building fort McHenry... It is a painful idea to me, that the beautiful city of Baltimore [should] be exposed to the disastera of War; but my mind will be a little solaced, if Fort McHenry does answer the purpose for which it was established, and affords me the Satisfaction of having contributed to your defence.[112]

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[112]"Col. John Foncier [sic] to James McHenry," 13th 7ber 1814. Maryland Historical Magazine, V (1910), 182-83.

APPENDIX I

Whetstone Point Lands

The land comprised by Whetstone Point was apparently first patented by one Charles Gorsuch, on February 24, 1661,[113] but if so, he abandoned it, for on June 2, 1702, a patent for the land was granted to James Carroll, who named it "Whetstone," perhaps because of its shape or its mineral deposits.

The Point was considered a favorable location for a town, and an Act of April 19, 1706, made it a Port of Entry. Any such commercial favor was not forthcoming, and in 1725 Carroll sold it to John Giles, who relinquished control of the land to the Principio Company, in 1727. That company, an association of British ironmasters and merchants, purchased of Giles all the iron ore upon or under his property. This colonial commercial enterprise intended to mine the iron deposits for the manufacture of pig and bar iron.[114]

When the Maryland Convention ordered defenses built on the site in 1776, all the property was confiscated from the Principio Company.

In 1780, while the fort continued to serve the defense of

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[113]Gorsuch's name was later applied to the Point across the channel from Whetstone. Gorsuch's Point was the site of the Lazaretto gun battery which played a minor role in the defense of September 13-14, 1814. Whether or not Gorsuch actually patented the peninsula of land later known as Whetstone, is a problem requiring additional research. In fact, the entire history of title transfers for Whetstone Point needs more precise study from primary sources. This appendix should be considered a brief preliminary attempt.

[114]Henry Whitely, "The Principio Company," Pennsylvania Magazine of History and Bibliography, XI (1887).

Baltimore, the land was surveyed[115] and platted into 76 lots, with the intention of auctioning it off to raise badly needed money for the Continental Army.[116] The first such auction took place on August 14-15, 1781, at which time about 16 lots were sold, mostly those on the upper end of the peninsula. Twenty-six additional lots were sold at the second auction held September 24-25, 1781.[117] The lots which were occupied by the "star fort," gun batteries, and outbuildings were not sold until July 30, 1782.[118]

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[115]Samuel Chase's instruction re sale of Whetstone Point, n.d., Executive Papers, Nov.-Dec., 1780, Hall of Records, Annapolis.

[116]The Council insisted that the lots on Whetstone Point be sold for specie, that is, hard money, for the "Purposes of the Officers and Soldiers of our Line in the Southern Army...," Council to Nathaniel Ramsey, August 6, 1781, Arch. Md., XLV, 547.

[117]"Acco. Sales of Sundry Lotts [sic] situated on Whetstone Point sold at Public Auction Septem. 24th & 25th, 1781, by Order & Direction of Nath'. Ramsey Esqr. One of the Commissioners for Confiscated British Property," September 26, 1781, signed by T[homas] Yates, Auctioneer, Maryland State Papers, Red Books, 1767, XX, 3. See also N. Ramsey to Cov. Lee, October 7, 1781, Red Books, 1768, XX, 2. M. Gist to Gov. Lee, October 2, 1781, Brown Books, 532, III, 64, T. Yates to Cov. Lee, October 8, 1781, Letters to the Governor and Council, Arch. Md., XLVII, 517, Council to Thomas Yates, October 8, 1781, Arch. Md., XLV, 636, Nathaniel Ramsey to Gov. Lee, [August 31?, 1781], Letters to the Governor and Council, Jan. 1-Dec. 31, 1781, Arch. Md., XLVII, 464.

[118]Map of Whetstone Point showing boundaries of lots 60-76 superimposed on Fort McHenry, August 1907, in Maryland Historical Society, Baltimore [H.A.R.P. map no. 292]. See also 2 maps of platted lots adjoining Fort McHenry Lands, December 29, 1817, National Archives, Cartographic Section, Record Croup 77, drawer 51, sheet 1½. See also list of title transfers for lots 1-76, Maryland Land Office, filed in H.A.R.P. archives, Fort McHenry in August, 1781 chronological notebooks. These consist of brief abstracts, without adequate documentation to determine the ultimate disposition of each lot, especially those lots which were deeded to the United States government from 1795 to 1800. See also B. Dickeson to Nath' Ramsey, July 31, 1782, Executive Papers, Commissioners of Confiscated Property, 1781 - 1784, Hall of Records, Annapolis.

After that date, the entire ownership of Whetstone Point was vested privately with a number of individuals. In the early 1790's when the federal government planned an overall system of coastal fortifications, the interest in Fort Whetstone was revived. The Maryland Legislature in December, 1793, granted permission to the War Department, upon application to the Governor of Maryland, to build additional fortifications upon Whetstone Point, "with the consent of the owner of the soil."[119] Whether this consent was granted willingly or by condemnation with recompense, is not clear.[120] At any rate, those lots numbered 73 through 76, which comprised the outer works, were not deeded to the U.S. until July 20, 1795. The lots (numbered 66, 68-72) which had been occupied by the old earthen "star fort" did not pass into government hands until November 6, 1798 and August 26, 1800.[121]

[119] "Whereas the United States may think it necessary to erect a fort, arsenal, or other military works or buildings on Whitestone [sic] Point, for the public defence: Therefore, Resolved, That, upon the application of the President of the United States to the Governor, for permission to erect a fort, arsenal, or other military works on the said point, for the purpose aforesaid, the Governor shall, and may, grant the same, with the consent of the owner of the soil," By the House of Delegates, December 25, 1793, American State Papers, XVI, 71.
James McHenry "voted in favor of the resolution to grant the federal government, with consent of the owner of the land, permission to build a fort or arsenal on Whetstone Point..." Bernard C. Steiner, The Life and Correspondence of James McHenry...(Cleveland: 1907), 144.

[120] "The collector at Baltimore has been directed to take measures for ascertaining the value of the land at Whetstone Point, near Baltimore, whereon the fortifications are erecting," December 17, 1794, American State Papers, XVI, 106.

[121] See unsigned, undated manuscript history of Fort McHenry, ca. 1887, sheet 15, H.A.R.P. chronological notebook for 1887.
July 20, 1795, from Alex. Furnival, 7 acres plus, under Act of Congress, June 9, 1794. November 6, 1798, from Wm. Goodwin, 2 acres, same act. August 26, 1800, from Wm. Goodwin, 11 acres plus, same act.

Additional property (24 acres) was acquired in 1836.[122]

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[122]"An account of such Repairs to Fort McHenry as appear on the books of the Engineer Department," Sheet 7, submitted by Capt. Fred. A. Smith, May 5, 1840. National Archives, Records of the War Department, Record Group 77, Office Chief of Engineers, Letters Received, S1028.

See also "PLAT of THE LOTTS [sic] OF LAND Belonging to the GENERAL GOVERNMENT on which Fort McHenry is Erected," surveyed June, 1840 by A. J. Bouldin. National Archives, Cartographic Section, Record Group 77, drawer 51, sheet 13 [H.A.R.P. map no. 109]. This plat also has a list of title conveyances for all the lots involved.

# APPENDIX II

## Foncin's Estimate[123]

An Estimate of the Expense for the construction of a Fort to be erected at Whetstone Point near Baltimore.

| | | | |
|---|---|---|---|
| Stone | | Perches | |
| for the foundations. . . . . | 800 | | |
| for the Wall of the Ramparts . . . . | 2300 | 3700 | |
| for the counterforts or buttresses . | 600 | | |
| at 20 shill p. perch . . . . . | | 9866.67 | |
| 7400....bushels of lime @ 2/b. . . . . | | 2466.67 | 16958.34 |
| Sand . . . . . | | 925. - | |
| Masons work at the rate of $1 p. perch . . . . . | | 3700. - | |
| Bricks | | | |
| 600,000 Bricks for the wall @ $6½ . . . . . | | 3900.- | |
| 1,800 bushels of lime. . . . . | | 600.- | 6600.- |
| Sand . . . . . | | 300.- | |
| Masons work at the rate of $3 pr. thousand bricks. . . | | 1800.- | |
| Earth by the cubical toise | | | |
| Solid of the Parapet . . . . . | 560 | | |
| Solid under the Parapet. . . . . | 1600 | | |
| Solid of the Banquette . . . . . | 120 | 4140 | |
| Solid of the Terreplein. . . . . | 1560 | | |
| from the foundations . . . . . | 300 | | |
| at $2 per cubic toise . . . . . | | | 8280.- |
| Powder Magazine. . . . . | | | 1600.- |
| Cistern. . . . . | | | 500.- |
| All the buildings for the avenue. off. sold. & [rest unreadable] | | | 6000.- |
| | | | $ 39938.34 |

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[123]Enclosed in a letter from Robert Gilmore to James McHenry, May 6, 1799, McHenry Papers.

## APPENDIX III

### Foncin and Fort Independence,[124] Boston, 1800-1802

During May of 1800, James McHenry resigned as Secretary of War. The fortifications at Baltimore were as yet incomplete. Foncin was still in charge of the works but being a McHenry appointee, his position was certainly less than secure. McHenry was well aware of the delay and waste that might result should the fortifications be subject to yet another engineer's ideas and opinions. To assist a smooth change of administration, McHenry prepared a lengthy report (for his successor) which outlined the state of affairs in the War Department. In that report McHenry not only identified Foncin with the works at Baltimore, but gave him an unreserved professional and personal recommendation that may have assisted in retaining Foncin and furthering his career as military engineer, as follows

> will it be permitted to mention, that I have employed on the Fortifications erecting at Baltimore, in the capacity of Engineer, a French Gentleman of the name of Foncin, and that evidence of ability in his profession by correcting errors of much consequence, in the original plan of the works, as well as of assiduity in Superintending and directing their progress, induced me to raise the compensation he was first engaged at--This Gentleman I would recommend to be continued in employ as heretofore--being much mistaken, if he will not be found, worthy of trust, competent to what he has undertaken, upright and unassuming in his conduct.[125]

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[124]This material on Fort Independence is not intended to be a physical history. It is a preliminary effort to collate two separate works of fortification which are related chronologically and architecturally. Fort Independence further interests us because it shares a common authoriship with Fort McHenry.

[125]A report from McHenry to his successor as Sec. of War, Article 12, May 29, 1800, McHenry Papers, Clements Library.

McHenry's vote of confidence was probably responsible for the continued employment of Foncin by the War Department, despite the anti-French feelings so prevalent at the time. At any rate, Foncin stayed on at Baltimore until his work was substantially completed. He was then transferred to Boston where he was charged with laying down a plan for strengthening the old defenses on Castle Island. The exact date of Foncin's removal to Boston is not known, but he was probably on the site by October 1, 1800.[126]

By November 24, 1800, Foncin had 1) appraised the existing fortification as an "old and useless inclosure," and 2) laid down a plan for a completely new fort to be erected over the old works (See Illustration No. 9). This plan, fortunately preserved,[127] is interesting for its marginal comments by a Frenchman experienced in military engineering. Foncin's notations interest us not only for the reference to Fort McHenry, but also because they include his justification for the new plan.

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[126]On October 16, 1800, John Foncin, was paid $287.72 as engineer for August and September, 1800, including his travel expenses from Baltimore to Boston. Register of Warrants, 1800-1802, October 16, 1800, General Accounting Office. This could mean that Foncin remained in Baltimore through the month of September and then moved to Boston, or was already in Boston during the two months mentioned in the warrant.

[127]Plan of Old Fort Independence and a new Fort Independence, "to be erected," (Superimposed in two colors), November 24, 1800, signed by Foncin, National Archives, Record Group No. 77, drawer 20, sheet 1.

> The fort of Boston having been drawn on the Same Scale as that of Baltimore,[128] their respective Size may be compared together. it will appear from this examen that the irregular pentagone of Boston is somewhat larger. But the Site of castle island has not permitted it to be smaller, and considering the length, narrowness, and irregularities of this island, there is no possibility to have a good work occupying only the top of the hill, as does the old inclosure. Such work would have no capacity, no defense; and the carrying of earth to form so high a rampart, would become too expensive. Thus considering the public utility, The money of the Government Shall not be employed in building a very defective and impotent fortification. Besides the port of Boston is to be attacked by large Squadrons of men of war, and fort independence is used as a strong place for prisoners of war. Those considerations give to the last an unquestionable importance, and rank it with the positions which ought to be strongly fortifyed. Therefore great care bas been used to have the whole inclosure well flanked. When the ground will be disposed, there Shall be no landing place without being discovered from the works.
>
> According to this plan, many works have been ascertained as indispensable. But the honorable Secretary of war will consider that an engineer who is desirous to discharge the duties of his Station, must always recall in his mind, This fundamental rule, Viz, That fortifications works being the Security of the nations, ought to be not only Strong, but erected on Solid and permanent Basis.

In 1801, Foncin prepared and submitted a more detailed plan of the proposed fortifications (See Illustration No. 10). This plan, also preserved, included elevations, sections, cannon size and placement, building locations, etc.[129] For the latter he offered two schemes.

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[128]Foncin's plan of Fort McHenry herein alluded to, has not been located, which makes his Fort Independence drawings of special interest to our study of the Baltimore harbor defenses.

[129]"Fort Independence," 1801, signed by Foncin, National Archives, Record Group No. 77, drawer 20, sheet 2. The similarity to Fort McHenry (designed by Foncin in 1799) is conspicuous, that is, a brick-faced, five bastioned, pentagonal fort, laid out in the classical French tradition. Owing to site problems, Foncin used an irregular pentagon on Castle Island. Physically, Fort Independence was designed to be about twenty five per cent larger (in area) than Fort McHenry. The escarpment walls of Fort Independence were to be 22 feet high compared to about 12 feet at Fort McHenry,

Architecturally, Foncin's designs for Fort Independence (note the main-gateway) are singularly undistinguished. Perhaps he was attempting to avoid any show of "extravagance" which might defeat his proposal.

The first called for grouping the buildings in a quadrangle. Of this plan, Foncin noted that

> The distribution of the Buildings...is simmetrical and agreeable. But the Place d'armes is smaller than in the 2d Fig. Besides the houses of the commandant and of the officers, are confined on each Side by The Barracks.[130]

The alternate plan called for placing the buildings against the inner periphery of the irregular pentagon, similar to the arrangement at Fort McHenry. Foncin apparently favored this plan for he commented as follows:

> The distribution of the buildings...is plain and convenient. The place d'armes is larger than in the 1st Fig. the houses of the Commandant and of the officers are less confined. Besides the ground will be earlier ready to admit those buildings.[131]

From other notations on this 1801 drawing, it would seem that work had not begun on Foncin's plan, for he indicated existing buildings upon the grounds "to be successively pulled down."

As yet we do not know the precise extent to which Foncin's plans were carried out, except that he remained in Boston until the fortwas completed. Apparently his commission not only included the design of Fort Independence, but also a layout for the general defense of the city and port of Boston. A misunderstanding over this latter area of responsibility developed between Foncin and the War Department. An 1803 letter from Foncin to President Jefferson brings this misunderstanding into sharper focus. The letter, included here in its entirety, requires a prefatory resume.

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[130] Ibid.

[131] Ibid.

As resident engineer at Fort Independence, Foncin completed his work in December, 1802. At that time he asked permission to remove to Philadelphia (as a personal convenience), there intending to finish his drawings of the Boston defenses. The Secretary of War granted the request, possibly thinking that Foncin wanted leave without pay. Unknown to Foncin, his pay was terminated when he moved to Philadelphia, where he continued to devote his attention to the problems of Boston. On February 12, 1803, Foncin was amazed to learn that he had been laboring without recompense.

Earnestly, but naively, he appealed for his "back" pay, but without success. Finally he laid the problem before President Jefferson with the hope that the President would rectify the error. Perhaps thinking he could take advantage of the pressing need for engineers, he announced his departure for France. What follows is a translation of the letter to Jefferson.[132]

Philadelphia
14 April, 1803

Sir:

> The President of the United States having honored me with the commission, enclosed herein, to erect the fortifications necessary for the defense of the port of Boston, I have built Fort Independence to the satisfaction of the citizens of that city. This work having been achieved, and after four years of steady labor, as much

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[132]Foncin to Jefferson, Philadelphia, 14 April 1803, Jefferson Papers, Historical Society of Pennsylvania.

The writer is indebted to Meir and Ruth Sofair, Philadelphia, for the translation of this letter from the French to English. Although proficient in English, Foncin wrote in his native language to avoid any "improper expressions," knowing that Jefferson was competent to understand his plight. The efficacy of the letter is not presently known.

in Baltimore [two years] as in Boston [two years]. I had requested permission to come to Philadelphia, and this favor has been granted me according to the enclosed letter from the Secretary of War dated August 5th [1802].

Having thus continued in the Service, I achieved during the winter the plans for the defense of the port of Boston, I sent to the Secretary of War various observations relative to the Service, and I have been paid without any difficulty. But while I was using in good faith the results of my experience in the art of fortifications in order to be more and more useful to a country which I would have wanted to serve all my life, how surprised I was, when without any prior notice I have been deprived of my salary since the first of December [1802] pursuant to Mr. Simmons' letter enclosed herein. I have since stopped my duties as engineer in the Service of the United States. I have claimed in vain what was due me from the first of December [1802] to the twelfth of February [1803], this last day being the one when I received, even though indirectly, the first notice of the will of the Secretary of War. Would it be possible that I, who worked with such constant energy to build without interruption the forts of Baltimore and Boston, I who have received the highest testimony from the citizens of those two cities, as one can see from the article of the Independent Chronicle enclosed herein, and from the members of the Congress who have visited my work, would it be possible, I wonder, that I would be deprived of the salary of 2 months and 12 days?

Truly, I have no objection to make when the Secretary of War wants to annul my commission from the President of the United States, but I should at least be informed, in positive terms, that I was no longer employed and consequently I would have returned to my native land.

Besides, one cannot claim that I have finished the entire work assigned to my care, the commission with which I have been honored consists of the general defense of the port and the city of Boston and Fort Independence is only a part of the plans. According to the opinion of the generals and other officers who have visited this place, it is considered indispensable to build a fort, or at least a redoubt, like the plan of the Secretary of War for Governors Island [New York].

The enclosed letter dated the 16th of March [1803] by which the Secretary of War wishes to re-employ me, but in considering me out of the Service since my arrival in Philadelphia, would appear to void the permission which

he had given me. But, alas, one should suppose that it has a retro-active effect, which is not possible. I could not imagine without intense feeling this severe interruption of my services, at a moment when I had reason to expect a recompence.

Therefore, sir, by entrusting myself entirely to your impartial justice, I take liberty to write you, requesting that you return to me the original documents on which I base my claims, so that you do not doubt my good faith, and if your decision is favorable, I would like very much to receive what is due me before my departure for France, having booked my passage on the S.S. "New Jersey" (belonging to Mr. Plumestade) which will leave for Anvers in 15 days.

Forgive me, sir, if I use my native language. It is a respect I must observe towards you, to avoid the use of any improper expressions.

I am,
Sir,
with the most profound
respect,
Your very humble
and very obediant
servant,

John Foncin

the sum that I claim is
258 dollars $\frac{89}{100}$

P.S. As it would be very flattering to my spirit that my services having been recognized by the President of the United States, from whom I have had the honor of receiving two commissions, I enclose the last letter dated 27th of July which I received in Boston, to say nothing of the several others by which the Secretary of War gave me testimony of his most genuine satisfaction.

Since it is not our purpose to trace the physical history of Fort Independence, this material is appended here because it sheds further light on the otherwise obscure career of John (or Jean) Foncin.

## APPENDIX IV

### Foncin and Fort Hamilton, Philadelphia, 1814

With the completion of Fort Independence, Foncin was apparently discharged from the service of the War Department. It appears that he moved to Philadelphia shortly after his Boston sojourn,[133] and perhaps he remained in Philadelphia until 1814, when he returned to France. However, his name does not appear in Philadelphia directories until 1811.[134] Foncin's activities for the period 1803-1814 are still unknown. It seems that he was idle much of that time, for in 1814 he wrote of his "displeasure of not being employed since many years...," but he went on to say that he was currently assisting in the design and erection of fortifications for the defense of Philadelphia.[135]

The system of defenses around Philadelphia during the War of 1812 was bolstered and supplemented under the aegis of the Philadelphia Committee of Defence. The Committee's efforts were primarily directed toward developing the defenses along the Delaware River, but it was also deemed adviseable to provide some measure of

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[133] See letter from Foncin to Pres. Jefferson, 14 April 1803, translated from the French and included in Appendix III.

[134] "Foncin, John O., 191 south Second," The Philadelphia Directory for 1811, 121, no occupation given.

[135] "Col. John Foncier [sic] to James McHenry," Phila., 13th 7ber 1814, Maryland Historical Magazine, V (1910), 182-183. The full text is given later in this appendix.

During this period, Foncin's name often appears with the rank "Colonel." He is not listed in Francis B. Heitman, Historical Register and Dictionary of the United States Army...Washington, 1903. Perhaps he earned the rank in France.

protection along the Schuylkill River.[136]

On August 29, 1814, the Sub-Committee reported their immediate intention to erect field fortifications on the heights and most important entrances to the city, to wit,

> from the west side of Schuylkill, commencing at such places as General Williams, and the United States engineers under his command, shall deem proper...[137]

The Sub-Committee was authorized to call to their assistance such "topographical engineers and men of science" necessary for the design and layout of the field defenses.[138]

Two days later, the volunteer "appointees" were named as follows:

Military Engineers
Chief - General Williams
Second - Colonel Foncin

For the Topographical Department
Dr. Patterson
Mr. [William] Strickland
Mr. John Biddle[139]

Under the leadership of this group, a corps of volunteer laborers constructed a redoubt on a hill above the Schuylkill, (see Illustration No. 11) near "Woodlands," the country house of William Hamilton. It is difficult to particularize on the division of responsibility for constructing this minor defensive work. However,

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[136]For a more complete discussion of Philadelphia's participation in the War of 1812, see Scharf and Westcott, History of Philadelphia, 1884, 1, 573-75.

[137]"Minutes of the Committee of Defence of Philadelphia,1814-1815," Memoirs of the Historical Society of Pennsylvania, 1867, VIII, 35.

[138]Ibid.

[139]Ibid., 49.

it does seem clear that Foncin designed the redoubt and assisted in its hasty erection during the month of September 1814.[140]

For his contribution to the erection of "Fort Hamilton,"[141] the Committee presented Foncin with a special resolution of appreciation, as follows,

> Resolved that the thanks of the General Committee of defence be presented to Colonell Fonciu [sic] for his voluntary and essential services, by the exercise of his distinguished Talents as an Engineer, in laying out & directing the works lately erected on the heighths near the Schuylkill, and that he be assured that in returning to his native country, he carries with him, the good wishes of the Citizens, among whom he has so long resided.[142]

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[140]"These works were principally laid out by Col. 1. Fonciu [sic], a French officer....His plans were carried out by a volunteer association of field engineers, both civil and military, composed of the following gentlemen: Chief Engineer, Gen. Jonathan Williams; Chief Assistant, Col. 1. Fonciu; Topographical Department, Dr. R. M. Patterson, William Strickland, Robert Brooks, William Kneass and Jonathan Jones..." Scharf and Westcott, op.cit, 574. This mention of Foncin was called to the writer's attention by Mr. Charles E. Peterson, Supervising Architect, Historic Structures, National Park Service.

[141]On September 19, 1814, the Committee of Defence resolved that the "Redoubt on the Hill near the 'Woodlands' be called Fort Hamilton..." Proceedings of the General Committee of Defence, Sep$^{r}$, 1814 to Feb$^{y}$, 1815, ms, vol. 2, 3, Historical Society of Pennsylvania.

For a "Plan of the Parapet of Fort Hamilton," see William Strickland's drawing in the Strickland Account Book, State Records Office, Harrisburg, Pa. The drawing has been published by Agnes Addison Gilchrist, Additions to William Strickland Architect and Engineer, 1788-1854, a documentary supplement of the Journal of The Society of Architectural Historians, XIII, 3 (October 1954), fig. 3. Strickland was a topographical engineer for this redoubt, supra, n. 140.

[142]Proceedings of the General Committee...op.cit, 12 (Sept. 21, 1814).

Foncin's response to this special resolution was read into the committee minutes on September 22, 1814. His letter acknowledged that

> The testimony of satisfaction which the General Committee of Defence have been pleased to give him, is, to his mind, the most flattering recompense for his services, and feeling himself happy in finding an opportunity of showing to the citizens of Philadelphia how grateful he is for the kind protection and friendship that this city hath afforded him during so many years.[143]

Fort Hamilton was Foncin's last work as military engineer in America, and he shortly thereafter departed for his native France.

Several months prior to his departure, Foncin in a letter to James McHenry, summarized his American career in eloquent terms which are especially appropriate to the main subject of this study - Fort McHenry.

> Philadelphia 13th 7ber 1814.
>
> Sir[144]
>
> The gratitude which I constantly preserve of your kindness towards me, permit me not to go to France, without letting you Know my feelings on this account. You not only have supported me while you was secretary of war; but your satisfaction towards my conduct, has been a great encouragement for the exerting of all my faculties in the service of the United States; and I still keep alive the flattering rememberance of the Satisfaction of the citizens of Baltimore, while I was building fort McHenry. I always have done all that was in my power to show my zeal; and in this very moment notwithstanding my displeasure of not being employed since many years, I am happy to answer the desire of the Citizens of Philadelphia, who have applyed to me, in order to help them in the projecting and erecting some fortifications for the defence of their city. I do it with the greatest pleasure,

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[143] "Minutes of the Committee...," op.cit, 172.

[144] supra, note 135.

being extremely thankful for the protection I have enjoyed there during many years. But our French Government being returned to our old beloved sovereigns, it is my duty to go back to my country, and I request from you Sir, the favor of an answer, which might be wundered as an evidence of the approbation of the U. S. for my services, while you was secretary of war. Your letter will be a record which may be some day useful to my son; and I must not neglect to procure him such an honorable title. Besides I wish to retire from the United States in the most convenient manner. I shall be very thankful for your kindness, and beg your pardon for the trouble I give you.

I am with great respect
Sir
Your most humble and
obedient Servant

John Foncier [sic]

P.S.-It is a painful idea to me, that the beautiful city of Baltimore be exposed to the disasters of War; but my mind will be a little solaced, if Fort McHenry does answer the purpose for which it was established, and affords me the Satisfaction of having contributed to your defence.

Col. John Foncier [sic] at Francis Breuil's Esq.r
Philadelphia

The Honorable James McHenry Esq.r

SUPPLEMENT TO APPENDIX IV (Issued October 1963)

Foncin's letter to James McHenry[145] (written coincidentally on the eve of the Fort McHenry bombardment) was an attempt to solicit a testimonial of Foncin's services to the United States, which in his words, "may be aome day useful to my son....Besides I wish to retire from the United Statea in the most convenient manner." The efficacy of his plea is not known, but it appears that (also on the same day) Foncin addressed a similar letter to at least one other former public official, William Eustis (Secretary of War, 1809-13). Eustis' reply, which is extant,[146] touches on Foncin's role at Fort McHenry and adds a concluding note to this Frenchman's career in America.

Boston Sept$^{r}$ 16. 1814.

Sir,

I have received this day your Letter of the 13$^{th}$ instant, and regret that any accident ahould have deprived you of the evidence of your faithful services to the United States, which a sense of justice induced me to give to you, when I had the honor to be Secretary to the War Department. The construction of fort McHenry in Baltimore and of fort Independence in the harbour of Boston remain monuments of your skill and taste as an Engineer. In the last mentioned place 1 had personally witnessed the faithfulness & integrity of your services, with your scrupulous regard to the publie interests and public property, which attracted the peculiar attention of those citizens of

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[145]For an extract of this letter (in context) see p. 49 of this study. For the full text of the letter see Appendix IV, pp. 65-6.

[146]This letter was recently offered for sale and we are grateful to Howard C. Rice, Jr. (Assistant Librarian, Princeton University Library) for bringing it to our attention. For other recent literature relating to Fort McHenry, see the article by G. Hubert Smith, "Archeological Explorations at Fort McHenry, 1958," Maryland Historical Magazine, vol. 58, no. 3 (September 1963), 247-250.

Boston who visited the Island. As a public officer it became my duty (and I had pleasure in discharging it) to render you justice. You can now receive from me no more than the evidence of a private citizen, who holds you in respect for the services you have rendered his country, and who has a perfect recollection of the testimony he gave as a public officer. If it can prove useful to you or to your Son (whom I well remember and whose misfortune at fort Independence rendered him doubly interesting) I shall be happy.

Whether you remain in this or return to your own country, I pray you to receive the constant respect and regard of, D$^{r}$ Sir, your obed$^{t}$ Serv$^{t}$

W. Eustis.

Col$^{o}$ John Foncin
at Francis Breuil's Esq$^{r}$
Philadelphia

SUPPLEMENT TO APPENDIX IV (Issued October 1963)

Brief Resumé of the American Career of
John Foncin, French Artillerist
and Military Engineer

| | |
|---|---|
| 20 Jan 1797 | Foncin came to United States. Upon his arrival, Moreau de St. Méry noted in his journal for January 20, 1797, "I raceived M. Foncin, the engineer, arriving [in Philadelphia] from Cayenne [French Guiana]." See p. 21, fn. 54. |
| 28 Mar 1799 | James McHenry, Secretary of War, appointed Foncin to the position of "temporary engineer" at Fort McHenry, Baltimore, compensating him at two dollars per diem plus travel expenses. Foncin was engaged to execute Louis Tousard's plans for enlarging and strengthening the existing fortifications on Whetstone Point. He was further instructed to devote any spare time to giving lessons to officers of the garrison in "gunnery, drawings and fortifications." Foncin appraised Tousard's plan as "insufficient" and suggested a new plan, which was adopted after considerable financial wrangling between the Baltimore Naval Committee and the War Department. See pp. 21-23, fn. 54-58. |
| July 1799 | Foncin's plan for the brick-faced, five-bastioned pentagonal fort enclosing a powder magazine and barracks, was begun in earnest. See p. 23. |
| 6 Jan 1800 | Foncin promoted to full Engineer. See p. 23, fn. 59. |
| Fall 1800 | Fort McHenry substantially completed and Foncin was ordered to Boston to lay down a plan for fortifications on Castle Island. See p. 24, fn. 60. |
| 16 Oct 1800 | Foncin was paid $287.72 as Engineer for Aug-Sept 1800 including travel expenses from Baltimore to Boston. See p. 56, fn. 126. |
| 24 Nov 1800 | Date of Foncin's plan of "Fort independence to be erected," preserved in the National Archives. See HABS photograph. |
| 1801 | Date of Foncin's more detailed plan of "Fort independence," which included some sections and elevations, also preserved at the National Archives. See HABS photograph. |
| 1801-02 | Foncin remained in Boston to carry out completion of Fort Independence, and started plans for over-all defense of that city. See pp. 56-59. |

5 Aug 1802 — Foncin received permission from War Department for removal to Philadelphia, where he intended to continue drafting of Boston's defense plans. See pp. 59-61.

12 Feb 1803 — Foncin learned that due to a misunderstanding, his pay had been discontinued on 1 December 1802. He appealed for his back pay without success. Apparently the Secretary of War considered Foncin "out of the Service" upon his departure from Boston. See p. 60.

16 Mar 1803 — Secretary of War sought to re-employ Foncin. See p. 60.

14 April 1803 — Foncin wrote to President Jefferson (from Philadelphia) seeking recompense for the 2 months and 12 days in question. Foncin's activities for the next decade are not known. See pp. 59-61.

1811 — "Foncin, John O., 191 south Second," The Philadelphia Directory for 1811, 121, no occupation given.

Aug 1814 — During the War of 1812, the Philadelphia Committee of Defence appointed "Colonel Foncin" as a military engineer (under General Jonathan Williams) to design field defenses for the city's protection. An earthen redoubt was constructed on a hill above the Schuylkill River near "Woodlands," country house of William Hamilton. A plan of "Fort Hamilton" survives in the account book of William Strickland, who was engaged as a topographical engineer. See pp. 62-65 and HABS photograph.

21 Sept 1814 — The Committee of Defence tendered a resolution of appreciation to Foncin for "his voluntary and essential services, by the exercise of his distinguished Talents as an Engineer, in laying out & directing the works lately erected on the heighths near the Schuylkill..." See p. 64.

22 Sept 1814 — Foncin acknowledged the testimony as a "flattering recompense for his services" and expressed pleasure for the chance to show his gratefulness "for the kind protection and friendship that this city hath afforded him during so many years." See p. 65.

13 Sept 1814 — Letter from Foncin to James McHenry, announced his intent to return to France since that government had been returned to "our old beloved sovereigns." He expressed displeasure at "not being employed since many years" but wished for a letter of recommendation regarding his previous services for the United States. The letter

was signed "Col. John Foncin, at Francis Breuil's Esq^r, Philadelphia." See pp. 65-66.

13 Sept 1814 — Foncin apparently wrote a similar letter to William Eustis. See p. 66a.

16 Sept 1814 — Euatis answers Foncin. See pp. 66a-66b.

PART B. Architectural Information

A. General Statement. The brick-faced fort is a unique, surviving American example of a late eighteenth century pentagonal fortification. The sally port is typical of early nineteenth century gateways built to control access to the inner garrison. As such it can be compared to the sally ports at Fort Mifflin, Pennsylvania, and Fort Washington, Maryland.

1. Architectural Character. The massive expanse of brickwork in the scarp walls, bastions and ravelin of the fort, architecturally expresses the protective function of a military installation such as Fort McHenry. Although the brick walls give the impression of solid masonry, they are only a facing for the earth and sod ramparts. The sally port which functions as the gateway through those ramparts, is a block of masonry, penetrated by a vaulted passageway. The top surface of the vault is concealed by brick parapet walls. The underground casemates, on each side of the sally port were installed in 1814 as an integral part of the sally port, and their architectural character is limited to the brick vaulted ceiling, since these rooms cannot be seen from the outside. The guard rooms were built later, and their inclusion in the sally port vicinity was for convenient control of the gateway. They are quite ordinary architecturally, small in size, and do not reveal another important function, i.e., that of confining prisoners. Architectural embellishments on the sally port are limited to the two arched openings with their keystones and impost blocks, executed in sandstone. There are no carvings or inscriptions. The only relief in the brick wall surfaces is provided by 3 recessed panels, framed with wood trim, which are situated over the arched openings of the sally port.

2. Condition of Fabric. Good.

B. Exterior.

1. Overall dimensions. Fort: Overall circumference approximately 1755 feet, height averages 12 feet. Ravelin: The two leading faces of the ravelin are about 132 feet long. The two back faces of the ravelin are about 67'-8" long. The maximum present height is about 11'-6". Sally port: 18 feet wide, 18 feet high, 35 feet deep. Guard rooms: first rooms north and south of sally port, 16'-1" wide, 13 feet high, 26'-6" deep. Outer rooms north and south of sally port, 14'-5" wide, 13 feet high, 16'-0" deep.

2. Foundations, not known.

3. Wall construction. Fort: Sloped brick masonry walls, laid up in English bond, that is, alternate rows of headers, with a stone coping, and stone quoining at all three outer corners of each bastion. Ravelin: Sloped brick masonry, laid in common bond with headers every fourth course, with stone coping and stone quoining at the three main corners. Sally port: Brick masonry, throughout, Flemish bond on the

exterior face, common bond on inner face and sides. Guard rooms: first room north and south of sally port, are brick masonry, laid up in common bond. Outer rooms north and south of sally port, brick masonry with air space (hollow wall construction).

4. Chimneys. A chimney projects 4'-6" through the terreplein from each of the outer casemates. Apparently they were built to serve fireplaces on the end walls of the outer casemates. The fireplaces have been removed, but the chimneys remain. They measure 2'-11" each way, are capped with a dressed block of granite. Smoke passage is provided by small rectangular vent holes on each face of the chimney. Each of the outer guard rooms were also built with a small chimney to accommodate iron stoves for heating the cells. Chimney on southernmost guard room has been removed above roof line, but chimney on northernmost guard room remains and is capped with sheet metal.

5. Openings.

a. Doorways and doors. Sally port: Sally port openings are 9'0" wide and 10'5" high. Each sally port doorway is arched with especially moulded, tapered voussoir bricks, black in color. The projecting keystones and impost blocks are of cut sandstone. Sally port doors are 4½" thick, divided doors, separately hinged, heavily constructed with three layers of planks riveted together. Doors are shaped to fit arched openings. Each door is about 4'-6" wide and 10'-4" high, hinged from the sides. One of the double doors at each end of the sally port is fitted with an inner door so that individual entrance can be gained without opening the main doors. Construction date of these elaborate doors is not known, but they pre-date the 1930 restoration by the War Department, under the direction of L. M. Leisenring. Casemates: Similar but smaller doors control access to the underground casemates. They are 2 5/8" thick, triple thickness of wood, riveted construction, divided at the middle, curved to fit the arched opening, and supported from the sides by long strap hinges. Doors leading to the northern casemates are 1930 replacements, and patterned after the opposite set of doors, date unknown. Guard rooms: Guard room door openings are distinguished from all other doorway openings in the fort by their arched brick lintels. Openings and doors seem to be original, that is, pre-Civil War, except for the northernmost door which is a 1930 replacement. The dressed granite steps leading to the 3 guard room doors are apparently original with the construction of these rooms. On the courtyard elevation of the southernmost room is a recessed panel, treated like a door opening with an arched lintel, but filled with brick. This is an original construction, deliberately introduced to balance the symmetry of the overall design.

b. Window openings and windows. The adjacent guard rooms flanking the sally port also have arched lintels of brick similar to the door openings. Those windows are double-hung, four over four in their arrangement of panes. The frames, including sash bars, muntins, etc. seem to be original, that is 1835, in their details. The dressed granite sills are also original. The single window on the north end

of the guard rooms is a replacement, apparently dating from the 1930 restoration. That window opening was originally furnished with iron bars. A small casement window located on the parade ground elevation of the southernmost guard room, lights a narrow corridor leading to the three prison cells. This window is divided into three panea, and appears to be original in its details, that is, 1857. The opening is near the roofline and guarded by iron bars. Below the window is a narrow, rectangular air-vent which serves to ventilate the hollow walls. On the end wall of the cell block are evidences of 3 small vent holes, one for each cell, but these have been bricked up. On the front wall (facing outside the fort) of the two inner guard rooms are evidences of larger windows, but those too, have been bricked up.

6. Roof.

a. Shape, covering. Sally port: flat, covered with sheet metal, wrapped over edge of roof, with lapped soldered joints. Application date of present roof not known, but probably 1930 or later. Guard rooms: shed-roofs, covered with sheet metal, wrapped over edge of roof, similar to sally port.

b. Cornice, eaves. Cornice around sally port and guard rooms, moulded wood cornice, painted white, date unknown. Wood cornice on south guard room replaced in 1930. Cornice applied to brick walls, joint protected by overlapping roof covering. Gutters and downspouts date from 1930 restoration.

C. Interiors.

1. Floor Plans. Casemates: small casemate rooma adjacent to sally port measure about 9'-0" by 15'-0". Access is by temporary wooden stairs from the sally port pasaageway. At the ends of the small casemates are open doorways leading into the outer cssemates, each measuring about 18'-0" by 33'-0". Guard rooma adjacent to sally port measure about 14'-6" by 22'-0". Southernmost room or cell block: consiats of a passage 2'-10" by 13'-5", whose only access is gained by two steps up from inside the guard room. The passage itself steps up twice to accommodate the rise of the underground casemate vaulting. Off the passage are three prison cells, each measuring about four feet by nine feet. Northernmost guard room: measures 11'-9" by 13'-0", and presently serves as an electric transformer room, but was originally a guard room and prison cell, access from either the adjacent guard room or from its own exterior door.

2. Flooring. Casemates: asphaltic concrete of recent origin, brick gutters around edges, with drain holes in the outside corners. Original floor surface unknown, probably wood. Sally port: aaphaltic concrete, original surface probably graveled. Guard rooms adjacent to sally port: wood, narrow, tongue and groove, recently installed, exact date not known. Outer guard rooms and cells: brick floors. Cells have thin asphaltic concrete surface over brick, gutters around edges.

3. Wall and ceiling finish. Casemates: whitewashed brick. Sally port: exposed brick, evidences of previous white washing or thin coating of cement wash. Guard room immediately south of sally port: whitewashed brick walls, exposed wooden rafters in ceiling, unpainted. Guard room immediately north of sally port: exposed brick, evidence that bricks are reused, some with whitewashing, exposed rafters in ceiling, unpainted. North guard and cell room: exposed brick walls, exposed rafters in ceiling, unpainted. Cell block: whitewashed brick walls, brick vaulted ceiling also whitewashed.

4. Doorways and doors. Casemates: door openings between casemate rooms are unframed, square-headed, with rectangular iron bar lintels supporting masonry above. South guard room and cell block: door opening between guard room and cell passage has no door, is unframed, has flat-arch brick lintel. Cell rooms: arched brick openings, heavy iron doors, made up of 1" by 2½" and 1" by 2" rectangular iron bar frames, with 1½" diameter vertical bars on approximately 2½" spacing, complete with pintle type hinges set in masonry, and iron hasps, with keepers set in masonry. North guard rooms: doorway between two northern guard rooms is framed with wood. Frame and door apparently date from the 1930 restoration. Door opening includes one wooden step into northernmost guard room. Opening has brick flat arch lintel.

5. Trim. Very little trim used in any of these rooms. Guard room south of sally port is the only room with baseboards, which appears to be original since they are notched into the door frame.

6. Hardware, is limited to that found on sally port doors, casemate doors, and guard room doors.

7. Lighting, electric, installed 1930 and later.

8. Heating. Casemates: apparently had fireplaces at one time, but if so, have been removed at some undetermined time. Guard rooms: north and south guard rooms originally had stoves, now gone, and stovepipe holes in chimneys have been plugged.

D. Site. Sally port, casemates and guard rooms are built into the earthen ramparts of the fort, protected from the outside by the brick walls. The roofs, however, project above the ramparts, and thus are visible from the front. The outside face of the sally port faces northeast.